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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Alton Pryor Examiner #: 74458 Date: 8/22/03
Art Unit: 1616 Phone Number 308-4691 Serial Number: 09/781695
Mail Box and Bldg/Room Location: CM1 2B09 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Inducing Production of Isoflavone to plants

Inventors (please provide full names): Terrence Graham; Lian-Mei Graham; Serena Landini

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Search claim 1

Search ① - plant or crop or stem or root or leaf or foliage

Search ② - compds of claim 1

★ combine: ① + ②

Search claim 21

Search ③ - iron effectors (OR) orthovanadate, or rose bengal or tetrazolium redox dye or copper salt or phytoalexin or glucan or phytophthora

Search ④ - compds of clam 21

★ combine: ③ + ④

Rush Search Approved
TC Pryor
SPE AU 1615
308-2927

(20)

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STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: Hanley	NA Sequence (#)		STN	$920
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	1	Questel/Orbit	
Date Searcher Picked Up: 8/22	Bibliographic		Dr.Link	
Date Completed: 8/22	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 90	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 69	Other		Other (specify)	

PTO-1590 (8-01)

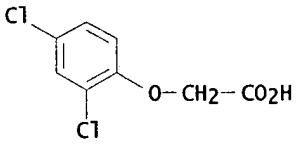
packet #2 cites cover claim 1 (isoflavone induction) but these are plant cultures (not a plant)

=> d ibib abs hitstr ind l95 1-6

L95 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:440428 HCAPLUS
DOCUMENT NUMBER: 137:244656
TITLE: Phenolic antioxidant compounds produced by in vitro shoots of sage (Salvia officinalis L.)
AUTHOR(S): Santos-Gomes, Paula C.; Seabra, Rosa M.; Andrade, Paula B.; Fernandes-Ferreira, Manuel
CORPORATE SOURCE: Department of Biology, University of Minho, Braga, 4710-057, Port.
SOURCE: Plant Science (Shannon, Ireland) (2002), 162(6), 981-987
CODEN: PLSCE4; ISSN: 0168-9452
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In vitro shoots of sage (Salvia officinalis L.) were established under four different cytokinin supplementations by culturing nodal segments excised from aseptically germinated seedlings. The highest rates of shoot proliferation and linear shoot growth occurred with the supplementation of 1.5 mg/l benzyladenine and 0.05 mg/l dichlorophenoxyacetic acid. However, under these conditions, the specific prodn. of total antioxidant phenolics was the lowest. Variation in kinetin (KIN) concn. (1.5; 2.0; 4.0 mg/l), in the presence of 0.05 mg/l 2,4-D, did not influence significantly the rates of shoot proliferation and linear shoot growth but influenced the prodn. of antioxidant phenolics and biomass. Seventeen compds. were identified in the antioxidant phenolic exts. from shoots: gallic acid, 3-O-caffeoylquinic acid, 5-O-caffeoylquinic acid, caffeic acid, and rosmarinic acid, as phenolic acids; hesperetin, apigenin, hispidulin, cirsimaritin, and genkwanin, as flavonoids; epirosmanol, epirosmanol Me ether, carnosol, epiisorosmanol Et ether, rosmadial, carnosic acid, and Me carnosate, as phenolic diterpenes. With exception of carnosic acid and Me carnosate, all the other phenolic compds. were also identified in a com. sample of this species. Rosmarinic acid and carnosol were the main compds. in all the antioxidant phenolic exts. The increase in concn. of KIN decreased the accumulation of the most of phenolic diterpenes, particularly that of carnosol.

IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(phenolic antioxidant compds. produced by in vitro shoots of sage under different cytokinin supplementations)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 16, 17
ST phenolic sage antioxidant; Salvia phenolic antioxidant
IT Antioxidants
Sage (Salvia officinalis)
(phenolic antioxidant compds. produced by in vitro shoots of sage)
IT Plant tissue culture
(phenolic antioxidant compds. produced by in vitro shoots of sage under different cytokinin supplementations)
IT **Flavonoids**
RL: BSU (Biological study, unclassified); BIOL (Biological study)

(phenolic antioxidant compds. **produced** by in vitro shoots of sage under different cytokinin supplementations)

IT Cytokinins
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(phenolic antioxidant compds. produced by in vitro shoots of sage under different cytokinin supplementations)

IT Carboxylic acids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(phenolic; phenolic antioxidant compds. produced by in vitro shoots of sage)

IT **Growth and development, plant**
(shoot formation; phenolic antioxidant compds. produced by in vitro shoots of sage under different cytokinin supplementations)

IT 149-91-7, Gallic acid, biological studies 327-97-9, 3-O-Caffeoylquinic acid 331-39-5, Caffeic acid 437-64-9, Genkwanin 520-33-2, Hesperetin 520-36-5, Apigenin 906-33-2, 5-O-Caffeoylquinic acid 1447-88-7, Hispidulin 3650-09-7, Carnosic acid 5957-80-2, Carnosol 6601-62-3, Cirsimaritin 20283-92-5, Rosmarinic acid 24703-38-6, Epirosmanol methyl ether 82684-06-8, Methyl carnosate 85514-31-4, Rosmadial 93380-12-2, Epirosmanol 177027-96-2, Epiisorosmanol ethyl ether
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(phenolic antioxidant compds. produced by in vitro shoots of sage under different cytokinin supplementations)

IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies 525-79-1, Kinetin 1214-39-7, Benzyladenine
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(phenolic antioxidant compds. produced by in vitro shoots of sage under different cytokinin supplementations)

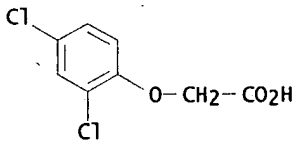
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L95 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:419531 HCAPLUS
DOCUMENT NUMBER: 137:168317
TITLE: Obtaining flavonoids by using tissue culture anther and style of Flos sophorae
AUTHOR(S): Wang, Lijuan; Li, Feng; Yang, Jianxiong
CORPORATE SOURCE: School of Sciences, Xi'an Jiaotong University, Xi'an, 710049, Peop. Rep. China
SOURCE: Xi'an Jiaotong Daxue Xuebao (2002), 36(3), 328-330
CODEN: HCTPDW; ISSN: 0253-987X
PUBLISHER: Xi'an Jiaotong Daxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB Flavonoids contg. rutin is manufd. by tissue culture of style and anther of the flower of Sophora (huaimi). **Induction** of callus and **prodn.** of **flavonoids** are improved with the addn. of hormones such as 2.4-D and 6-BA.

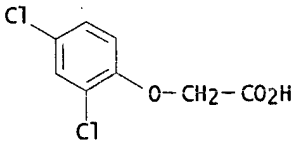
IT **94-75-7**, 2,4-D, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(obtaining flavonoids by using tissue culture anther and style of Flos sophorae)

RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 16-2 (Fermentation and Bioindustrial Chemistry)
ST rutin flavonoid manuf Sophora tissue culture
IT Plant tissue culture
(callus; obtaining flavonoids by using tissue culture anther and style of Flos sophorae)
IT Natural **products**, pharmaceutical
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(huaimi; obtaining **flavonoids** by using tissue culture anther and style of Flos sophorae)
IT Sophora
(obtaining flavonoids by using tissue culture anther and style of Flos sophorae)
IT Flavonoids
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(obtaining flavonoids by using tissue culture anther and style of Flos sophorae)
IT **Hormones, plant**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(obtaining flavonoids by using tissue culture anther and style of Flos sophorae)
IT 153-18-4P, Rutin
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(obtaining flavonoids by using tissue culture anther and style of Flos sophorae)
IT **94-75-7**, 2,4-D, biological studies 1214-39-7, 6-BA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(obtaining flavonoids by using tissue culture anther and style of Flos sophorae)

L95 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:625766 HCAPLUS
DOCUMENT NUMBER: 135:315972
TITLE: Growth and **flavonoid production** in Bellis perennis L. callus cultures
AUTHOR(S): Siatka, T.; Kasparova, M.
CORPORATE SOURCE: Department of Pharmacognosy, Charles University, Hradec Kralove, 500 05, Czech Rep.
SOURCE: Herba Polonica (2001), 47(1), 17-21
CODEN: HPBIA9; ISSN: 0018-0599
PUBLISHER: Instytut Roslin i Przetworow Zielarskich
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Effects of a cytokinin benzyladenine (at the concns. of 0.1 or 1 mg/l) in combination with auxins 2,4-dichlorophenoxyacetic acid, .alpha.-naphthaleneacetic acid or .beta.-indoleacetic acid (at the concns. of 0.1; 1 or 10 mg/l) on the cell growth and **flavonoid prodn.** in Bellis perennis callus cultures were studied. The best results were obtained by combination of 0.1 mg/l 2,4-dichlorophenoxyacetic acid with 0.1 mg/l benzyladenine for the growth and by combination of 1 mg/l .alpha.-naphthaleneacetic acid with 0.1 mg/l benzyladenine for the **flavonoid prodn.**
IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(growth and **flavonoid prodn.** in Bellis perennis callus cultures)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



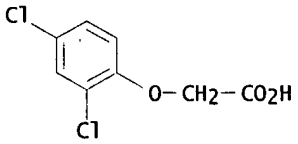
CC 11-3 (Plant Biochemistry)
Section cross-reference(s): 16
ST Bellis callus culture **flavonoid prodn** phytohormone
IT Plant tissue culture
(callus; growth and **flavonoid prodn.** in Bellis perennis callus cultures)
IT Bellis perennis
(growth and **flavonoid prodn.** in Bellis perennis callus cultures)
IT Auxins
Hormones, plant
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(growth and **flavonoid prodn.** in Bellis perennis callus cultures)
IT **Flavonoids**
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(growth and **flavonoid prodn.** in Bellis perennis callus cultures)
IT 86-87-3, .alpha.-Naphthaleneacetic acid 87-51-4, .beta.-Indoleacetic acid, biological studies **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies 1214-39-7, BA
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(growth and **flavonoid prodn.** in Bellis perennis callus cultures)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L95 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:621314 HCAPLUS
DOCUMENT NUMBER: 135:329300
TITLE: Promotive effect of auxins on UDP-glucose:flavonol glucosyltransferase activity in Vitis sp. cell cultures
AUTHOR(S): Kokubo, Tetsuro; Ambe-Ono, Yukiko; Nakamura, Mayumi; Ishida, Hidekatsu; Yamakawa, Takashi; Kodama, Tohru
CORPORATE SOURCE: Department of Biotechnology, The University of Tokyo, Tokyo, 113-8657, Japan
SOURCE: Journal of Bioscience and Bioengineering (2001), 91(6), 564-569
CODEN: JBBIF6; ISSN: 1389-1723
PUBLISHER: Society for Bioscience and Bioengineering, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The addn. of 2,4-dichlorophenoxyacetic acid (2, 4-D) to Vitis sp. cell cultures significantly enhanced the prodn. of quercetin 3,7,4'-tri-O-glucoside, 3,7-di-O-glucoside and 3,4'-di-O-glucoside from quercetin. This enhancement of glucosylation by 2,4-D was also obsd. in cell cultures of other plant species. The activity of UDP-glucose:flavonol glucosyltransferase (UFGT) in cell-free exts. of Vitis sp. cell cultures increased approx. 10-fold, 48 h after the addn. of 2,4-D to the culture medium. The UFGT activity increased linearly up to 15 h and showed a maximal response to the addn. of 10-50 mg/l of 2,4-D at 48 h. The promotive effect of 2,4-D was inhibited by cycloheximide suggesting that de novo protein synthesis was involved in this phenomenon. Interestingly, similar promotive effects on the UFGT activity were obsd.

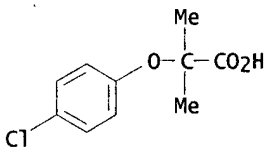
for other phytohormones such as kinetin and several anti-auxins.

IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
882-09-7, PCIB
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 882-09-7 HCAPLUS
CN Propanoic acid, 2-(4-chlorophenoxy)-2-methyl- (9CI) (CA INDEX NAME)



CC 11-2 (Plant Biochemistry)
ST plant suspension culture auxin **flavonol** glucosyltransferase **induction**

IT Glucosylation
(biol.; promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

IT Carrot
Catharanthus roseus
Cinnamomum cassia
Datura inoxia
Gardenia jasminoides
Grape
Ocimum basilicum
Parsley (Petroselinum crispum)
Patchouli
Rhubarb (Rheum palmatum)
Safflower (Carthamus tinctorius)
Saffron (Crocus sativus)
Stevia rebaudiana
Sweet potato
Tobacco
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

IT **Hormones, plant**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

IT Plant tissue culture
(suspension; promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

IT 50-30-6, 2,6-Dichlorobenzoic acid 86-87-3, NAA 87-51-4, IAA, biological studies 88-82-4, TIBA 93-76-5, 2,4,5-T **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies 118-91-2, 2-Chlorobenzoic acid 132-66-1, NPA 133-32-4, Indolebutyric acid

525-79-1, Kinetin 575-89-3, 2,4,6-T 771-50-6, Indole-3-carboxylic acid
830-96-6, 1H-Indole-3-propanoic acid **882-09-7**, PCIB
21293-29-8, Abscisic acid 98640-00-7
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

IT 117-39-5, Quercetin
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

IT 482-35-9, Quercetin 3-O-glucoside 9075-75-6, UDP-glucose-quercetin glucosyltransferase
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

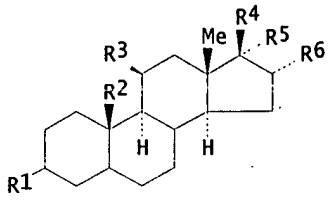
IT 6892-74-6, Quercetin 3,7-di-O-glucoside 29125-80-2 133563-23-2
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(promotive effect of auxins on UDP-glucose: flavonol glucosyltransferase activity in Vitis sp. cell cultures)

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L95 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:597745 HCAPLUS
DOCUMENT NUMBER: 135:148598
TITLE: **Inducing production** of **isoflavones** in plants using nuclear receptor ligands
INVENTOR(S): Graham, Terrence L.; Graham, Lian-mei Y.; Landini, Serena
PATENT ASSIGNEE(S): Ohio State University Research Foundation, USA
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001058262	A1	20010816	WO 2001-US4420	20010212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002004458	A1	20020110	US 2001-781695	20010212

PRIORITY APPLN. INFO.: US 2000-181707P P 20000211
OTHER SOURCE(S): MARPAT 135:148598
GI



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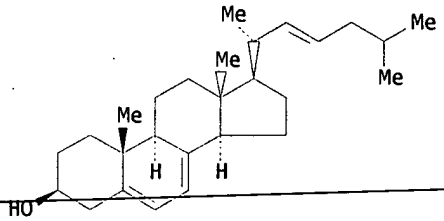


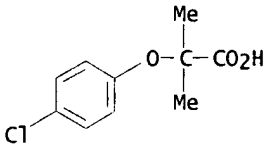
II

AB Methods for increasing the levels of isoflavones in plants are provided. The method comprise applying a biol. effective amt. of compn. comprising a select nuclear receptor ligand to the plant. Compns. for **inducing** the **prodn.** of **isoflavones** in plants are also provided. Such compns. comprise one or preferably, a combination of the select nuclear receptor ligands. The nuclear receptor ligand is: (a) a steroid I (rings A and B have the same or different degrees of satn.; R1 = O or OR ; R2,R5 = H, or Me; R3 = H, OH or O; R4 = R3, CO2H, COCH2OH or COMe; R6 = H, OH or OMe) or II; (b) a phenolic estrogen or di-Ph 4-HOC6H4R7C6H4OH-4 (R7 = bond, alkane or alkene); (c) a long-chain fatty acid R8CO2R9 (R8 = C5-25 aliph. chain; R9 = H or C 1-5 aliph. chain); (d) a peroxisome proliferator R10R11 R11R12CO2R13 (R10 = arom. ring; R11 = O or S; R12, R13 = C1-8 aliph. chain); or (e) zearalenone. The compns. also comprise a compd. that enhances the capacity of the plant to release daidzein and/or utilize it for the prodn. of glyceollin. The action of such a compd. is complementary to that of the nuclear receptor ligand.

IT **882-09-7**, Clofibric acid **17413-79-5**, 2-(2-Chlorophenoxy)-2-methylpropionic acid
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(nuclear receptor ligand **inducer** of **isoflavone** **prodn.** in plants)

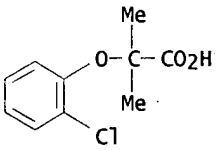
RN 882-09-7 HCAPLUS

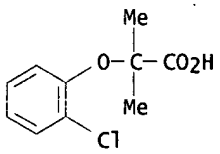
CN Propanoic acid, 2-(4-chlorophenoxy)-2-methyl- (9CI) (CA INDEX NAME)



RN 17413-79-5 HCAPLUS

CN Propanoic acid, 2-(2-chlorophenoxy)-2-methyl- (9CI) (CA INDEX NAME)

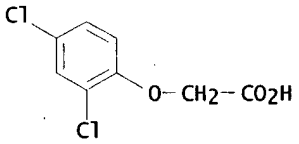




IC ICM A01N031-00
ICS A01N035-00; A01N037-00; A01N037-44; A01N039-02
CC 5-3 (Agrochemical Bioregulators)
Section cross-reference(s): 11
ST **isoflavone prodn** plant nuclear receptor ligands
IT Estrogens
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(agonists; nuclear receptor ligand **inducer** of **isoflavone prodn.** in plants)
IT **Nuclear receptors**
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(ligands; **inducers** of **isoflavone prodn.** in plants)
IT Fatty acids, biological studies
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(long-chain; nuclear receptor ligand **inducer** of **isoflavone prodn.** in plants)
IT **Peroxisome proliferators**
(nuclear receptor ligand **inducer** of **isoflavone prodn.** in plants)
IT Alfalfa (Medicago sativa)
Bean (Phaseolus limensis)
Chickpea (Cicer arietinum)
Peanut (Arachis hypogaea)
Plant (Embryophyta)
Soybean (Glycine max)
(nuclear receptor ligand **inducers** of **isoflavone prodn.** in)
IT Bean (Phaseolus vulgaris)
(pinto; nuclear receptor ligand **inducers** of **isoflavone prodn.** in)
IT Onium compounds
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(tetrazolium, redox dyes; enhancer of nuclear receptor ligand **inducers** of **isoflavone prodn.** in plants)
IT 9012-72-0, glucan
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(Phytophthora sojae cell wall, fragment; enhancer of nuclear receptor ligand **inducers** of **isoflavone prodn.** in plants)
IT 11121-48-5, Rose bengal 14333-18-7, Orthovanadate
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(enhancer of nuclear receptor ligand **inducers** of **isoflavone prodn.** in plants)
IT 50-02-2, Dexamethasone 50-23-7, Hydrocortisone 50-27-1, Estriol 50-28-2, 17.beta.-Estradiol, biological studies 52-39-1, Aldosterone 53-06-5, Cortisone 53-16-7, Estrone, biological studies 53-41-8, Androsterone 56-53-1, Diethylstilbestrol 57-83-0, Progesterone, biological studies 57-87-4, Ergosterol 60-33-3, Linoleic acid, biological studies 84-16-2, Hexestrol 84-17-3, Dienestrol 112-79-8, Elaidic acid 112-80-1, Oleic acid, biological studies 145-13-1, Pregnenolone 446-72-0, Genistein 479-13-0, Coumesterol 486-66-8, Daidzein 506-32-1, Arachidonic acid 593-39-5, Petroselinic acid **882-09-7**, Clofibric acid 6217-54-5 10417-94-4, Eicosapentaenoic acid **17413-79-5**, 2-(2-Chlorophenoxy)-2-methylpropionic acid 17924-92-4, Zearalenone 52214-84-3, Ciprofibrate
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(nuclear receptor ligand **inducer** of **isoflav ne**

prodn. in plants)
IT 446-72-0D, Genistein, conjugates 485-72-3D, Formononetin, aglycon
486-66-8D, Daidzein, aglycon 574-12-9, **isoflavone**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(nuclear receptor ligand **inducers** of **isoflavone**
prodn. in plants)

L95 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:31716 HCAPLUS
DOCUMENT NUMBER: 104:31716
TITLE: **Formation** of chalcones and **isoflavones** by callus culture of Glycyrrhiza uralensis with different production patterns
AUTHOR(S): Kobayashi, Mitsugu; Noguchi, Hiroshi; Sankawa, Ushio
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1985), 33(9), 3811-16
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Formononetin, isoliquiritigenin, echinatin, liquiritigenin, p-hydroxybenzoic acid, 3'-hydroxyformononetin and isobavachalcone were isolated from callus culture of Glycyrrhiza uralensis which was established on Murashige-Skoog's medium contg. NAA (2 ppm), 2,4-D (1 ppm) and benzyladenine (0.1 ppm). Formononetin, 3'-hydroxyformononetin and isobavachalcone showed different patterns of prodn.
IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(**formation** of chalcones and **isoflavones** by callus culture of Glycyrrhiza uralensis response to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-1 (Plant Biochemistry)
ST Glycyrrhiza culture chalcone isoflavone; auxin Glycyrrhiza culture flavonoid; cytokinin Glycyrrhiza culture flavonoid
IT Plant tissue culture
(**formation** of chalcone and **isoflavones** by callus, of Glycyrrhiza uralensis, auxins and cytokinins effect on)
IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(**formation** of chalcones and **isoflavones** by callus culture of Glycyrrhiza uralensis response to)
IT Ketones, biological studies
RL: FORM (Formation, nonpreparative)
(chalcones, formation of, by callus culture of Glycyrrhiza uralensis, auxins and cytokinins effect on)
IT **Flavones**
RL: FORM (Formation, nonpreparative)
(iso-, **formation** of, by callus culture of Glycyrrhiza uralensis, auxins and cytokinins effect on)
IT Licorice
(G. uralensis, chalcones and **is flavones formati n** by callus culture of, auxins and cytokinins effect on)
IT 86-87-3 **94-75-7**, biological studies 1214-39-7
RL: BIOL (Biological study)

(formation of chalcones and isoflav nes by callus
culture of Glycyrrhiza uralensis response to)
IT 99-96-7, biological studies 485-72-3 578-86-9 961-29-5 20575-57-9
20784-50-3 34221-41-5
RL: FORM (Formation, nonpreparative)
(formation of, by callus culture of Glycyrrhiza uralensis, auxins and
cytokinins effect on)

packet #1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FILE 'REGISTRY' ENTERED AT 15:45:35 ON 22 AUG 2003
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http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

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L19             SCR 1839 OR 2043
L35     1018656 SEA FILE=REGISTRY ABB=ON  PLU=ON  C/RELF AND NRS=1 AND O>1 AND
                O<5 AND C<25 AND N<3 NOT (PMS/CI OR (P OR SI)/ELS)
L36             STR

                    11
                    O
                    ||
                    O~Ak        O @7      S @12
                   @9  10
Cb~G1~Ak~C~G2
1   2   3   4   5

VAR G1=O/12
VAR G2=7/9
NODE ATTRIBUTES:
CONNECT IS X3  RC AT   1
CONNECT IS E2  RC AT   3
CONNECT IS E1  RC AT   7
CONNECT IS E1  RC AT  10
CONNECT IS E2  RC AT  12
DEFAULT MLEVEL IS ATOM
GGCAT   IS UNS  AT   1
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS M6 C  AT   1
ECOUNT  IS X8 C  AT   3
ECOUNT  IS X5 C  AT  10

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  10

STEREO ATTRIBUTES: NONE
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L42        8472 SEA FILE=REGISTRY ABB=ON  PLU=ON  L41/COM

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carbocyclic only 1 ring

no polymers

aromatic ring

O/S

H/AK

8472 cpds

FILE COVERS 1907 - 22 Aug 2003 VOL 139 ISS 9
FILE LAST UPDATED: 21 Aug 2003 (20030821/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

search for claim 1

CT = controlled terminology
PFT = old, new or "used for" terms
NT = narrower term

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=> d que nos l94
L17             SCR 1838 AND 2005 AND 1199
L19             SCR 1839 OR 2043
L35       1018656 SEA FILE=REGISTRY ABB=ON  PLU=ON  C/RELF AND NRS=1 AND O>1 AND
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                  INDUC? OR BIOSYNTH? OR FORM?)
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L68            11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L66 AND (L46 OR L65)
L70            10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 NOT AGEING/TI
L71             1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L67 NOT RAT/TI
L76         15016 SEA FILE=HCAPLUS ABB=ON  PLU=ON  11-5/SC,SX
L77            60 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L43 AND L76
L78            23 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND (DISEAS? OR RESIST?)
L79             1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 AND (?FLAVON? OR AGLYCON?
                  OR GLYCEOLLIN?)
L93            12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L70 OR L71) OR L79
L94             6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L93 AND (CROP OR STEM OR ROOT
                  OR LEAF OR FOLIAGE)
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← plant biochemistry

6 cites

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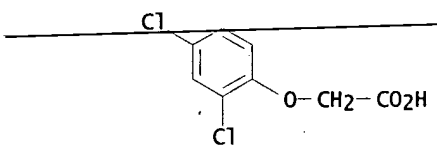
=> d ibib abs hitstr l94 1

L94  ANSWER 1 OF 6  HCAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         1992:252407  HCAPLUS
DOCUMENT NUMBER:          116:252407
TITLE:                    The biosynthetical capacity of the active principles
                          of "in vitro" regenerated Solenostema argel (Sel.)
                          Hayne. callus and shoots
AUTHOR(S):                Amariei, Doina; Stanescu, Ursula; Gille, Elvira;
                          Onisei, Tatiana
CORPORATE SOURCE:         "Stejarul" Res. Stn., Piatra Neamt, 5600, Rom.
SOURCE:                   Revue Roumaine de Biologie, Serie de Biologie Vegetale
                          (1991), 36(1-2), 71-6
                          CODEN: RRBVD5; ISSN: 0250-5517
```

DOCUMENT TYPE: Journal
LANGUAGE: English
AB The nontoxic active pharmaceutical components of S. argel were previously shown to have anti-inflammatory, anti-ulcerous, and immunostimulatory activity. This report describes the induction of callus and shoot regeneration from S. argel explants in response to various concns. of benzylaminopurine, NAA, and 2,4-D. The active pharmacol. compds. identified in regenerated callus and shoots included flavones, polyphenols, carotenoids, phytosterols, and polyholosides. Their levels were similar to or superior to those in control leaves.
IT 94-75-7, biological studies
RL: BIOL (Biological study)
(in induction of Solenostema argel callus and shoot regenerants, biosynthesis of pharmacol.-active compds. in relation to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



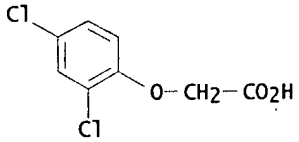
=> d ind l94 1

L94 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
CC 11-8 (Plant Biochemistry)
ST Solenostema callus shoot regeneration explant hormone; pharmaceutical Solenostema callus regenerated shoot
IT Solenostemma argel
(callus tissue and in vitro regenerated shoots of, hormonal induction of and biosynthesis of pharmacol.-active compds. by)
IT Pharmaceuticals
(formation of, by Solenostema argel callus tissue and in vitro regenerated shoots)
IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(induction of Solenostema argel callus and shoot regeneration by, biosynthesis of pharmacol.-active compds. subsequent to)
IT Regeneration, biological
(of Solenostema argel shoots, from cultured explants, hormonal induction of)
IT Carotenes and Carotenoids, biological studies
RL: BIOL (Biological study)
(pharmacol.-active, formation of, by Solenostema argel callus and regenerated shoots)
IT Plant tissue
(callus, of Solenostema argel, hormonal induction of and biosynthesis of pharmacol.-active compds. by)
IT Steroids, biological studies
RL: BIOL (Biological study)
(hydroxy, pharmacol.-active, formation of, by Solenostema argel callus and regenerated shoots)
IT **Flavonoids**
RL: BIOL (Biological study)
(oxo, pharmacol.-active, **formation** of, by Solenostema argel callus and regenerated shoots)
IT Phenols, biological studies
RL: BIOL (Biological study)
(polyhydric, pharmacol.-active, formation of, by Solenostema argel callus and regenerated shoots)
IT Plant tissue

(shoot, Solenostema argel in vitro regenerated, hormonal induction of and biosynthesis of pharmacol. active compds. by)
IT 86-87-3, NAA **94-75-7**, biological studies 1214-39-7
RL: BIOL (Biological study)
(in induction of Solenostema argel callus and shoot regenerants, biosynthesis of pharmacol.-active compds. in relation to)

=> d ibib abs hitstr ind l94 2-6

L94 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:18445 HCAPLUS
DOCUMENT NUMBER: 116:18445
TITLE: Effects of culture conditions on isoflavonoid levels of transformed and non-transformed cultures of Lupinus - a comparison of suspension and hairy **root** cultures
AUTHOR(S): Berlin, J.; Ruegenhagen, C.; Rippert, M.; Erdogan, S.
CORPORATE SOURCE: Biol. Bundesanst. Forst- und Landwirtsch., Braunschweig, D-3300, Germany
SOURCE: Zeitschrift fuer Naturforschung, C: Journal of Biosciences (1991), 46(9-10), 735-42
CODEN: ZNCBDA; ISSN: 0341-0382
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Some highly productive suspension and hairy **root** cultures were found among several transformed cultures of L. polyphyllus and L. hartwegii. A transformed suspension culture Lupo 30150 and a **root** culture Luha 15834 contg. the highest specific isoflavone glucoside content were characterized and compared with normal phytohormone-dependent lines with respect to product stability as well as their responsiveness to external triggers, e.g. response to changes in the medium. While phytohormone-dependent suspension cultures lost their initial ability to **form** increased levels of **isoflavonoids** on phytohormone-free medium, the transformed phytohormone-independent suspension Lupo 30150 remained a highly productive line, despite the fact that its specific levels decreased to 60% of the initial values during several years in liq. medium. Highest stability of product patterns and levels were noted for the transformed **root** culture. Phytohormones had little effect on growth and isoflavonoid levels in suspension cultures, while they reduced both strongly in **root** cultures. In the presence of 2,4-D the **root** culture changed into an aggregated low producing suspension culture from which the **root** state recovered on phytohormone-free medium. As long as the **root** state was maintained, isoflavonoid levels could not be distinctly improved by media variation while specific isoflavonoid levels of suspensions were increased by stress factors such as phosphate depletion. When suspensions were transferred to fresh medium phenylalanine ammonia-lyase was greatly induced within 24 h, while the activity remained nearly unchanged in **root** cultures.
IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(**isoflavonoid** glycosides **formation** in lupine cultures response to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



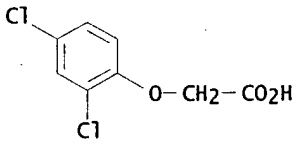
CC 11-2 (Plant Biochemistry)

ST isoflavonoid glycoside lysine culture genetic transformation
IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(**isoflavonoid** glycoside **formation** and growth of lupine tissue cultures response to)
IT Plant tissue culture
(**isoflavonoid** glycosides **formation** by lupine hairy **roots** in)
IT Agrobacterium rhizogenes
Agrobacterium tumefaciens
(lupine transformation by, **isoflavonoid** glycoside **formation** and culture conditions in relation to)
IT Transformation, genetic
(of lupine, **isoflavonoid** glycosides **formation** in culture in relation to)
IT Glycosides
RL: FORM (Formation, nonpreparative)
(**isoflavonoid**, **formation** of, by lupine transformed and nontransformed suspension and hairy **root** cultures)
IT Plant tissue culture
(suspension, **isoflavonoid** glycosides **formation** by transformed and nontransformed lupine in)
IT Lupine
(L. hartwegii, **isoflavonoid** glycoside **formation** in transformed and nontransformed suspension and hairy **root** cultures of, culture conditions effect on)
IT Lupine
(L. polyphyllus, **isoflavonoid** glycoside **formation** in transformed and nontransformed suspension and hairy **root** cultures of, culture conditions effect on)
IT 14265-44-2, Phosphate, biological studies
RL: BIOL (Biological study)
(deficiency of, **isoflavonoid** glycoside **formation** and growth of lupine cultures response to)
IT 36190-98-4 137351-12-3 138110-87-9
RL: FORM (Formation, nonpreparative)
(formation of, in lupine cultures, culture conditions effect on)
IT 57-50-1, Sucrose, biological studies 6484-52-2, Ammonium nitrate, biological studies 7757-79-1, Potassium nitrate, biological studies
RL: BIOL (Biological study)
(**isoflavonoid** glycoside **formation** and growth of lupine cultures response to)
IT 86-87-3, 1-NAA **94-75-7**, biological studies 525-79-1, Kinetin 1214-39-7
RL: BIOL (Biological study)
(**isoflavonoid** glycosides **formation** in lupine cultures response to)

L94 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:213986 HCAPLUS
DOCUMENT NUMBER: 112:213986
TITLE: Application of growth substances and mineral nutrition affecting **disease** development and **glyceollin** production of soybean
AUTHOR(S): Chakraborty, U.; Chakraborty, B. N.; Purkayastha, R. P.
CORPORATE SOURCE: Cent. Life Sci., Univ. North Bengal, Darjeeling, 734 430, India
SOURCE: Folia Microbiologica (Prague, Czech Republic) (1989), 34(6), 490-7
CODEN: FOMIAZ; ISSN: 0015-5632
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of foliar application of growth substances and mineral nutrition of the host on the development of charcoal rot **disease** in soybean caused by Macrophomina phaseolina was tested. Among the eight growth substances examd., gibberellic acid was most successful in reducing

the **disease** severity, followed by IAA and 2,3,5-triiodobenzoic acid. Low concns. of these compds. stimulated (and high concns. inhibited) the mycelial growth of M. phaseolina in vitro. Substrate supplementation with different doses of N, P, K and Ca had varying effects on **disease** development. **Disease** was increased considerably by both excess and deficient N and also by deficient Ca, while excess Ca conferred partial **resistance**. **Glyceollin** contents of host **roots** before and after excess Ca and gibberellic acid (10 mg/L) treatments were estd. Both significantly increased **glyceollin** prodn. in infected **roots**. However, gibberellic acid induced **glyceollin** synthesis even in uninoculated **roots**. Changes in the host reaction towards increased **resistance** was correlated with increased phytoalexin prodn.

IT **94-75-7**, 2,4-D, biological studies
RL: BIOL (Biological study)
(charcoal rot **disease** of soybean inhibition by)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC **11-5** (Plant Biochemistry)
ST soybean infection Macrophomina phytohormone nutrient
IT Plant nutrition
(mineral, charcoal rot **disease** of soybean development
response to growth substances and)
IT Macrophomina phaseolina
(soybean infection by, growth substances and mineral nutrition effect on)
IT Mineral elements
RL: BIOL (Biological study)
(Macrophomina phaseolina growth response to, charcoal rot **disease** of soybean development in relation to)
IT Soybean
(**disease**, charcoal rot, phytohormones and mineral nutrition effect on)
IT 77-06-5, Gibberellic acid 87-51-4, IAA, biological studies 88-82-4, TIBA **94-75-7**, 2,4-D, biological studies
RL: BIOL (Biological study)
(charcoal rot **disease** of soybean inhibition by)
IT 86-87-3, NAA 120-23-0, 2-Naphthoxyacetic acid 525-79-1, Kinetin 1214-39-7, 6-Benzylaminopurine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(charcoal rot **disease** of soybean response to)
IT 57103-57-8D, derivs.
RL: FORM (Formation, nonpreparative)
(formation of, by soybean in charcoal rot **disease**, growth substances and mineral nutrition effect on)
IT 7440-09-7, Potassium, biological studies 7440-70-2, Calcium, biological studies 7723-14-0, Phosphorus, biological studies 7727-37-9, Nitrogen, biological studies
RL: BIOL (Biological study)
(Macrophomina phaseolina growth response to nutrient, charcoal rot **disease** of soybean in relation to)

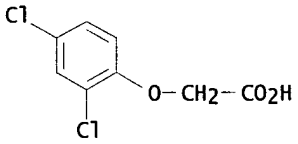
L94 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1988:628692 HCAPLUS
DOCUMENT NUMBER: 109:228692

TITLE: Initiation and maintenance of callus tissue culture of Uncaria elliptica for **flavonoid producti n**
AUTHOR(S): Law, K. H.; Das, N. P.
CORPORATE SOURCE: Fac. Med., Natl. Univ. Singapore, Singapore, 0511, Singapore
SOURCE: Progress in Clinical and Biological Research (1988), 280(Plant Flavonoids Biol. Med. 2: Biochem., Cell., Med. Prop.), 67-70
CODEN: PCBRD2; ISSN: 0361-7742
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Using specific combinations of auxin and cytokinin hormones, calli initiation and growth were found to occur on young **leaf** explants of the Uncaria elliptica plant. There was also a different pattern of **flavonoid prodn.** found in the calli tissue. The major flavonoid, rutin, was not found in the calli tissue but was present in the source plant. However, (-)-epicatechin was detected in almost equal amts. both in the calli tissue and the source plant. The formation of this **flavonoid** occurred when the calli were grown in the dark. An increase in kinetin concn. showed a moderate increase in epicatechin accumulation.

IT **94-75-7**, Dichlorophenoxyacetic acid, biological studies
RL: BIOL (Biological study)
(**flavonoid prodn.** enhancement by, in callus tissue culture of Uncaria elliptica)

RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 16-6 (Fermentation and Bioindustrial Chemistry)
ST Uncaria callus tissue culture flavonoid auxin; cell culture Uncaria epicatechin prodn cytokinin

IT Uncaria elliptica
(callus tissue culture of, **flavonoid prodn.** with, plant hormones effect on)

IT Flavonoids
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP. (Preparation)
(manuf. of, by callus tissue culture of Uncaria elliptica, auxins and cytokinins effect on)

IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(auxins, **flavonoid prodn.** enhancement by, in callus tissue culture of Uncaria elliptica)

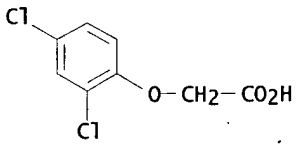
IT Plant tissue culture
(callus, **flavonoid prodn.** by, of Uncaria elliptica, auxins and cytokinins effect on)

IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(cytokinins, **flavonoid prodn.** enhancement by, in callus tissue culture of Uncaria elliptica)

IT 86-87-3, .alpha.-Naphthalene acetic acid **94-75-7**, Dichlorophenoxyacetic acid, biological studies 133-32-4, Indole-3-butyric acid 525-79-1, Kinetin (plant hormone) 1214-39-7, N6-Benzyladenine 2365-40-4
RL: BIOL (Biological study)
(**flavon id prodn.** enhancement by, in callus tissue culture of Uncaria elliptica)

IT 490-46-0P, (-)-Epicatechin
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, by callus tissue culture of Uncaria elliptica, auxins and cytokinins effect on)

L94 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:512153 HCAPLUS
DOCUMENT NUMBER: 105:112153
TITLE: Effects of 5% maltose and plant growth regulators on the callus growth and **flavonoid formation** of some Scutellaria baicalensis **stem** callus lines
AUTHOR(S): Yamamoto, Hisako; Chatani, Nobuyasu; Watanabe, Kume; Tomimori, Tsuyoshi
CORPORATE SOURCE: Sch. Pharm., Hokuriku Univ., Kanazawa, 920-11, Japan
SOURCE: Shoyakugaku Zasshi (1986), 40(1), 33-9
CODEN: SHZAAY; ISSN: 0037-4377
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Studies were conducted on effects of plant growth regulators on the growth and flavonoid content of some S. baicalensis **stem** callus lines on Linsmaier-Skoog medium contg. 5% maltose instead of 3% sucrose. The optimum combination of plant growth regulators in line St-20 were 10-7M NAA and 10-5M kinetin, and 10-5M NAA and 10-5M kinetin for callus growth and 10-6M IAA and 10-5M kinetin, and 10-7M NAA and 10-5M kinetin for flavonoid content. When 5% maltose was added to the medium, an increase in flavonoid content was obsd. in line St-20 but not in 3 other lines.
IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(callus growth and **flavonoid formation** response to, in Scutellaria baicalensis)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-3 (Plant Biochemistry)
ST Scutellaria callus growth flavonoid phytoregulator; maltose callus growth Scutellaria
IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(callus growth and **flavonoid formation** response to, in Scutellaria baicalensis)
IT Plant tissue culture
(callus, **flavonoid formation** and growth of, of Scutellaria baicalensis, phytoregulators effect on)
IT Scutellaria baicalensis
(**flavonoid formation** and callus growth of, phytoregulators effect on)
IT **Flavonoids**
RL: FORM (Formation, nonpreparative)
(**formation** of, by Scutellaria baicalensis callus cultures, phytoregulators effect on)
IT Glycosides
RL: FORM (Formation, nonpreparative)
(**flavonoid, formation** of, by Scutellaria baicalensis callus cultures, phytoregulators effect on)
IT 50-99-7, biological studies 57-50-1, biological studies 69-79-4 86-87-3 87-51-4, biological studies **94-75-7**, biological

studies 525-79-1
RL: BIOL (Biological study)
(callus growth and **flav n id formati n** response to, in Scutellaria baicalensis)

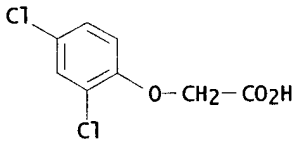
IT 480-40-0 491-67-8 632-85-9 21967-41-9 36948-76-2 51059-44-0 57396-78-8 104125-36-2
RL: FORM (Formation, nonpreparative)
(formation of, in Scutellaria baicalensis callus culture, carbon sources and phytoregulators effect on)

L94 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:203955 HCAPLUS
DOCUMENT NUMBER: 104:203955
TITLE: **Flavonoid production** in Scutellaria baicalensis callus cultures
AUTHOR(S): Yamamoto, Hisako; Chatani, Nobuyasu; Kitayama, Akemi; Tomimori, Tsuyoshi
CORPORATE SOURCE: Sch. Pharm., Hokuriku Univ. Kanagawa, Kanazawa, 920-11, Japan
SOURCE: Plant Cell, Tissue and Organ Culture (1986), 5(3), 219-22
CODEN: PTCEDJ; ISSN: 0167-6857
DOCUMENT TYPE: Journal
LANGUAGE: English

AB St-20 and St-7 lines were isolated from the **stem** callus of S. baicalensis Georgi on indole-3-acetic acid and 2,4-dichlorophenoxyacetic acid media, resp. The flavonoid content of St-20 line was superior to that of St-7 line. The growth and flavonoid (baicalin, baicalein, wogonin, wogonin-7-O-glucuronide) contents in St-20 line were best on Linsmaier-Skoog's basal medium contg. 10-7M-10-5M kinetin. St-20 line showed the same flavonoid content and pattern as the **root** of parent plant after 70 days of culturing.

IT 94-75-7, biological studies
RL: BIOL (Biological study)
(growth and **flavonoid formation** by Scutellaria baicalensis callus response to)

RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-2 (Plant Biochemistry)
Section cross-reference(s): 16

ST Scutellaria callus flavonoid

IT **Plant growth and development**
(by Scutellaria baicalensis callus, **flavonoid formation** in relation to)

IT Plant tissue culture
(callus, of Scutellaria baicalensis, flavanoid formation in, phytohormones effect on)

IT **Plant hormones and regulators**
RL: BIOL (Biological study)
(**flavonoid formation** by callus cultures of Scutellaria baicalensis response to)

IT Scutellaria baicalensis
(**flavonoid formation** by callus of, phytohormones effect on)

IT **Flavonoids**
RL: FORM (Formation, nonpreparative)
(**formation** of, by Scutellaria baicalensis callus,

phytohormones effect on)
IT 491-67-8 632-85-9 21967-41-9 51059-44-0
RL: FORM (Formation, nonpreparative)
(formation of, by Scutellaria baicalensis callus culture, phytohormones effect on)
IT 87-51-4, biological studies **94-75-7**, biological studies
525-79-1
RL: BIOL (Biological study)
(growth and **flavonoid formation** by Scutellaria baicalensis callus response to)

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=> s l93 not l94
L95             6 L93 NOT L94
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← cites cover claim # 1 but are directed to plant cultures see packet # 2 for these references

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L5   ANSWER 1 OF 12  HCAPLUS  COPYRIGHT 2003 ACS on STN
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claim 21


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=>  d que nos 183
L17             SCR 1838 AND 2005 AND 1199
L19             SCR 1839 OR 2043
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                O<5 AND C<25 AND N<3 NOT (PMS/CI OR (P OR SI)/ELS)
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L42        8472 SEA FILE=REGISTRY ABB=ON  PLU=ON  L41/COM
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L43       32167 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L42
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                OR GLYCEOLLIN?)
L75           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L74 AND DISEAS?
L76       15016 SEA FILE=HCAPLUS ABB=ON  PLU=ON  11-5/SC,SX
L84           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L75 AND L76  1 cite

=> d que nos 187
L17             SCR 1838 AND 2005 AND 1199
L19             SCR 1839 OR 2043
L35     1018656 SEA FILE=REGISTRY ABB=ON  PLU=ON  C/RELF AND NRS=1 AND O>1 AND
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L41        8846 SEA FILE=REGISTRY SUB=L35 SSS FUL L36 AND L17 NOT L19
L42        8472 SEA FILE=REGISTRY ABB=ON  PLU=ON  L41/COM
L43       32167 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L42
L74         215 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L43 AND (?FLAVON? OR AGLYCON?
                OR GLYCEOLLIN?)
L85          19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L74 AND  (DISEAS? OR RESIST?)

L86           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L85 AND (PLANT OR CROP OR
                STEM OR ROOT OR LEAF OR FOLIAGE)
L87           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L86 NOT AGEING/TI  6 cites

=> d que nos 192
L17             SCR 1838 AND 2005 AND 1199
L19             SCR 1839 OR 2043
L35     1018656 SEA FILE=REGISTRY ABB=ON  PLU=ON  C/RELF AND NRS=1 AND O>1 AND
                O<5 AND C<25 AND N<3 NOT (PMS/CI OR (P OR SI)/ELS)
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                GLUCAN OR PHYTOPHTHORA
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L91          24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L90 AND (PLANT OR CROP OR
                STEM OR ROOT OR LEAF OR FOLIAGE)
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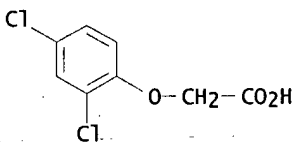
L92 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L91 NOT (PHARMACEUTICAL OR WORKERS OR LIVER)/TI 21 cites

=> s l83-84 or l87 or l92
L96 27 (L83 OR L84) OR L87 OR L92 27 cites total

=> d ibib abs hitstr ind 1-27

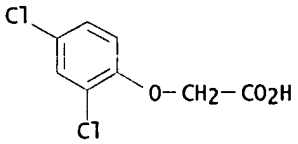
L96 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:13172 HCAPLUS
DOCUMENT NUMBER: 138:133384
TITLE: Somatic embryo formation and **plant** regeneration in 'Zaoh' line No.2 of Japanese angelica tree (Aralia elata seem.)
AUTHOR(S): Amemiya, Keiichi; Mochizuki, Tohru
CORPORATE SOURCE: Yamanashi Agricultural Research Center, Yamanashi, 405-0105, Japan
SOURCE: Plant Biotechnology (Tokyo, Japan) (2002), 19(5), 383-387
CODEN: PLBIF6; ISSN: 1342-4580
PUBLISHER: Japanese Society for Plant Cell and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mass propagation of the Japanese angelica tree (Aralia elata seem.) 'Zaoh' line No.2 was established through somatic embryos. Petioles of leaflets were cultured for induction of calli on an MS medium contg. 1 mgL-1 of 2,4-D in combination with 0.5 mgL-1 BA. The initiated calli were moved onto MS medium supplemented with glutamine 450 mgL-1 and asparagine 300 mgL-1. An embryogenic callus developed after 5 mo and was moved onto regulator-free MS medium. Numerous plantlets were regenerated from this embryogenetic callus, and rooted plantlets were potted after acclimation and planted to the field. The **plants** had the same characteristics in morphol. in the field, except for the no. of thorns per internode. The **plants** also had the same resistance to **Phytophthora disease** as was in the original genotype 'Zaoh' line No.2. This study provided a method for mass propagation from petioles of leaflets and proves that regenerated **plants** maintain the morphogenetic characteristics and **disease** resistance of the original genotype.
IT **94-75-7**, 2,4-D, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(MS medium contg.; somatic embryo formation and **plant** regeneration in 'Zaoh' line No.2 of Japanese angelica tree (Aralia elata seem.))
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 9-11 (Biochemical Methods)
Section cross-reference(s): 11
ST Aralia somatic embryo formation **plant** regeneration
IT **Plant** tissue culture
(callus; somatic embryo formation and **plant** regeneration in 'Zaoh' line No.2 of Japanese angelica tree (Aralia elata seem.))
IT Aralia elata
Regeneration, **plant**
Somatic embryogenesis, **plant**
(somatic embryo formation and **plant** regeneration in 'Zaoh'

line No.2 of Japanese angelica tree (Aralia elata seem.))
IT **94-75-7**, 2,4-D, biological studies 1214-39-7, BA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(MS medium contg.; somatic embryo formation and **plant** regeneration in 'Zaoh' line No.2 of Japanese angelica tree (Aralia elata seem.))
IT 56-85-9, Glutamine, biological studies 70-47-3, Asparagine, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(MS medium supplemented with; somatic embryo formation and **plant** regeneration in 'Zaoh' line No.2 of Japanese angelica tree (Aralia elata seem.))

L96 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:8659 HCAPLUS
DOCUMENT NUMBER: 134:190774
TITLE: Arabidopsis dth9 mutation identifies a gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses
AUTHOR(S): Mayda, Esther; Mauch-Mani, Brigitte; Vera, Pablo
CORPORATE SOURCE: Instituto de Biologia Molecular y Celular de Plantas, Universidad Politecnica-Consejo Superior de Investigaciones Cientificas, Valencia, 46022, Spain
SOURCE: Plant Cell (2000), 12(11), 2119-2128
CODEN: PLCEEW; ISSN: 1040-4651
PUBLISHER: American Society of Plant Physiologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To det. which components of the **plant** defense response make important contributions to limiting pathogen attack, an M2 mutagenized population of a transgenic Arabidopsis line was screened for mutants showing constitutive expression of .beta.-glucuronidase activity driven by the promoter region of the CEVI-1 gene. The CEVI-1 gene originally was isolated from tomato **plants** and has been shown to be induced in susceptible varieties of tomato **plants** by virus infection in a salicylic acid-independent manner. The authors report here the characterization of a recessive mutant, detachment9 (dth9). This mutant is more susceptible to both virulent and avirulent forms of the oomycete Peronospora and also exhibits increased susceptibility to the moderately virulent bacterial pathogen Pseudomonas syringae pv maculicola ES4326. However, this mutant is not affected in salicylic acid metab. and shows normal expression of pathogenesis-related (PR) genes after pathogen attack. Furthermore, after inoculation with avirulent pathogens, the dth9 mutant shows a compromised systemic acquired resistance response that cannot be complemented by exogenous application of salicylic acid, although this mol. is able to promote normal activation of PR genes. Therefore, the dth9 mutation defines a regulator of **disease** susceptibility that operates upstream or independently of salicylic acid. Pleiotropy is also evident in the dth9 mutant in the sense that the shoots of dth9 **plants** are insensitive to the exogenously applied auxin analog 2,4-dichlorophenoxyacetic acid.
IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(Arabidopsis with mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses insensitivity to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



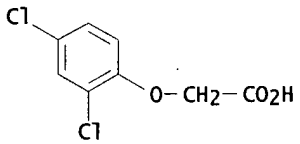
CC 11-5 (Plant Biochemistry)
Section cross-reference(s): 3
ST Arabidopsis mutation gene **disease** susceptibility salicylate dependence
IT Chromosome
(Arabidopsis thaliana 2; of DTH9 gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses linkage in Arabidopsis)
IT **Phytoalexins**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(Arabidopsis with mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses accumulation of)
IT Auxins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(Arabidopsis with mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses insensitivity to)
IT Gene, **plant**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(DTH9; mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses of Arabidopsis)
IT Mutation
(in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses of Arabidopsis)
IT Arabidopsis thaliana
(mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses of)
IT **Disease** resistance, **plant**
Peronospora parasitica
Pseudomonas syringae maculicola
(mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses of Arabidopsis)
IT Genetic linkage
(of DTH9 gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses in Arabidopsis)
IT 135531-86-1, Camalexin
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(Arabidopsis with mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses accumulation of **phytoalexin**)
IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(Arabidopsis with mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses insensitivity to)
IT 69-72-7, Salicylic acid, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(mutation in gene involved in regulating **disease** susceptibility without affecting salicylic acid-dependent responses of

Arabidopsis)
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L96 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:587780 HCAPLUS
DOCUMENT NUMBER: 132:47704
TITLE: Induced resistance and **phytoalexin** accumulation in biological control of early blight **disease** for tomato **plants** by gamma irradiation and growth regulators
AUTHOR(S): El-Sayed, S. A.; El-Hawa, Abou
CORPORATE SOURCE: Radiobiology Department, Nuclear Research Center, Atomic Energy Commission, Egypt
SOURCE: Pakistan Journal of Biochemistry and Molecular Biology (1996), 29(1-2), 41-50
CODEN: PJBBF5
PUBLISHER: Pakistan Society of Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Gibberellic acid (GA), indole 3-acetic acid (IAA), 6-furfurylaminopurine (kinetin), 2,4-dichlorophenoxyacetic acid (2,4-D), and Alar were found to be abiotic elicitors for a **phytoalexin**, rishitin, in tomato and represented a crit. role in its accumulation. On the contrary, gamma irradn. was not able to initiate rishitin formation. Application with GA and IAA, followed by artificial infection with Alternaria solani, had a synergistic effect on rishitin accumulation, which led to a highly significant resistance to early blight caused by A. solani. Meanwhile, application with growth inhibitors, 2,4-D and Alar, as well as gamma irradn. treatment followed by infection with A. solani had an antagonistic effect on rishitin accumulation that led to significant increase in susceptibility to early blight. Hence, it was concluded that pre-infectional application with GA and/or LAA could induce and/or improve early blight **disease** resistance in tomato. The 2,4-D, Alar and/or gamma irradn. tend to weaken natural immunity by lowering the biogenerating capacity of tomato **leaves** and the accumulation of the natural antibiotic, rishitin.

IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(induced resistance and **phytoalexin** accumulation in biol. control of early blight **disease** for tomato **plants** by gamma irradn. and growth regulators)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-5 (Plant Biochemistry)
Section cross-reference(s): 10
ST blight tomato rishitin phytohormone gamma ray
IT **Disease, plant**
(early blight; induced resistance and **phytoalexin** accumulation in biol. control of early blight **disease** for tomato **plants** by gamma irradn. and growth regulators)
IT Alternaria solani
Gamma ray
Tomato
(induced resistance and **phytoalexin** accumulation in biol. control of early blight **disease** for tomato **plants**

by gamma irradn. and growth regulators)
IT Hormones, **plant**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(induced resistance and **phyt alexin** accumulation in biol. control of early blight **disease** for tomato **plants** by gamma irradn. and growth regulators)
IT **Phytoalexins**
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(induced resistance and **phytoalexin** accumulation in biol. control of early blight **disease** for tomato **plants** by gamma irradn. and growth regulators)
IT 77-06-5, Gibberellic acid 87-51-4, Indole 3-Acetic acid, biological studies **94**-75-7, 2,4-Dichlorophenoxyacetic acid, biological studies 525-79-1, 6-Furfurylaminopurine 1596-84-5, Alar
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(induced resistance and **phytoalexin** accumulation in biol. control of early blight **disease** for tomato **plants** by gamma irradn. and growth regulators)
IT 18178-54-6, Rishitin
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(induced resistance and **phytoalexin** accumulation in biol. control of early blight **disease** for tomato **plants** by gamma irradn. and growth regulators)
REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

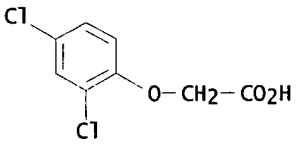
L96 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:106411 HCAPLUS
DOCUMENT NUMBER: 126:140630
TITLE: Significance and application of microbial toxicity tests in assessing ecotoxicological risks of contaminants in soil and sediment
AUTHOR(S): van Beelen, P.; Doelman, P.
CORPORATE SOURCE: National Inst. Public Health Environment, Bilthoven, 3720 BA, Neth.
SOURCE: Chemosphere (1997), 34(3), 455-499
CODEN: CMSHAF; ISSN: 0045-6535
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Micro-organisms are vital for soil fertility and for the degrdn. of org. matter and pollutants in soils and sediments. Due to their function and ubiquitous presence micro-organisms can act as an environmentally very relevant indicator of pollution. Microbial tests should be used discriminatory for the establishment of soil and sediment quality guidelines. This review gives an evaluation of microbial toxicity tests and a novel method to derive quality guidelines. Long term microbial tests are generally less sensitive than short term tests. The toxic effects can be obscured by the activity of a few **resistant** micro-organisms, when for example soil respiration is used as a sum parameter during a long incubation period. Mineralization tests with high substrate concns. which enable growth, are less sensitive than similar tests with low concns. of substrate. The latter tests are more relevant for natural ecosystems. The often applied microbial toxicity tests can be categorized as single species tests, biomass measurements, carbon and nitrogen transformations, enzymic tests and tests measuring changes in microbial diversity. Comparisons between tests can only be indicative because the relative sensitivity depends on the toxicants and soils used. The respiration rate per unit of biomass is a more sensitive indicator of toxic effects than the respiration rate or the amt. of biomass alone. The autotrophic nitrification and acetylene redn. tests can be sensitive when

short incubation times are used. The nitrogen mineralization, denitrification and many enzymic tests are often not very sensitive. The urease activity is a relatively sensitive enzymic test in many studies. The replacement of sensitive micro-organisms by different **resistant** species can have serious ecol. consequences. Some species become extinct while others appear in bulging nos. Adaptation of a community to a pollutant must be considered as the very process which disturbs a polluted ecosystem. The **resistant** micro-organisms often fail to perform specific ecol. functions. The occurrence of **resistant** species can be used as an sensitive and ecol. relevant indicator for deterioration from environmental pollution. Persistent toxic effects on the microflora can be caused by zinc, cadmium and copper at concn. levels lower than European Community limits. Tests with anaerobic sediment processes were orders of magnitude more sensitive for some chlorinated aliph. compds. than aquatic toxicity tests. The addn. of a few mg zinc per kg soil can inhibit the more sensitive microbial processes (like chloroform or 4-chlorophenol degrdn.), whereas soil invertebrates and some **plants** are less sensitive to zinc. After the evaluation of the tests, a novel method is described to derive soil and sediment quality guidelines using microbial toxicity tests. The results of single species tests with micro-organisms can be incorporated into the contemporary risk assessment method for higher organisms which is based on the extrapolation from single species tests to the protection of 95% of all species in an ecosystem. This method uses the No Obsd. Effect Concns. (NOEC) of a no. of toxicity tests to calc. a Hazardous Concn. 5% (HC5). The HC5 is calcd. from more than 5 NOEC values. In analogy the Effect Concn. 10% (EC10) can be used to calc. the Dangerous Concn. 5% (DC5). The DC5 is calcd. from more than 5 EC10 values. The DC5 should give protection to 95% of the microbial processes. The DC5 of a no. of pollutants are calcd. and compared with the HC5 values from the literature. Microbial toxicity tests can be used for risk assessment because micro-organisms are among the most sensitive organisms for the effects of pollutants.

IT **94-75-7**, biological studies
RL: ADV (Adverse effect, including toxicity); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 4-1 (Toxicology)

ST microbial toxicity test ecotoxicity pollutant; soil pollution ecotoxicity microbial toxicity test; sediment contaminant ecotoxicity microbial toxicity test; ecotoxicol risk pollutant test microbial toxicity

IT Aquatic sediments
Ecotoxicity
Nitrification
Nitrogen cycle
Respiration, microbial
Risk assessment
Soil pollution
Toxicity
Water pollution
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT Trace metals
RL: ADV (Adverse effect, including toxicity); POL (Pollutant); BIOL

(Biological study); OCCU (Occurrence)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT Enzymes, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT Toxicants
(contaminants; application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT Trace metals
RL: ADV (Adverse effect, including toxicity); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(heavy; application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT Bioassay
(microbial toxicity test; application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT Heavy metals
RL: ADV (Adverse effect, including toxicity); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(trace; application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT 67-66-3, Chloroform, biological studies 71-43-2, Benzene, biological studies 25323-30-2, Dichloroethylene
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT 56-38-2, Parathion 62-53-3, Aniline, biological studies 65-85-0, Benzoic acid, biological studies 69-72-7, 2-Hydroxybenzoic acid, biological studies 74-82-8, Methane, biological studies 74-84-0, Ethane, biological studies 74-85-1, Ethene, biological studies 74-99-7, Propyne 76-87-9, Triphenyltin hydroxide 87-86-5, Pentachlorophenol 93-07-2, 3,4-Dimethoxybenzoic acid 94-75-7, biological studies 95-47-6, Orthoxylene, biological studies 95-76-1, 3,4-Dichloroaniline 99-05-8, 3-Aminobenzoic acid 99-06-9, 3-Hydroxybenzoic acid, biological studies 99-10-5, 3,5-Dihydroxybenzoic acid 100-09-4, 4-Methoxybenzoic acid 100-71-0, 2-Ethylpyridine 101-21-3, Chlorpropham 106-47-8, 4-Chloroaniline, biological studies 107-00-6, 1-Butyne 108-42-9, 3-Chloroaniline 118-92-3, 2-Aminobenzoic acid 149-91-7, 3,4,5-Trihydroxybenzoic acid, biological studies 150-13-0, 4-Aminobenzoic acid 150-68-5 490-79-9, 2,5-Dihydroxybenzoic acid 501-65-5, Diphenyl acetylene 536-74-3, Phenylacetylene 542-75-6, Telone II 584-13-4, 4-Amino-1,2,4-triazole 625-53-6, Ethylthiourea 627-19-0, 1-Pentyne 1420-07-1, Dinoterb 1423-60-5, 3-Butyn-2-one 1504-58-1, 3-Phenyl-2-propyn-1-ol 1918-16-7, Propachlor 1929-82-4, Nitrapyrin 1945-84-2, 2-Ethynylpyridine 2921-88-2, Chlorpyrifos 4187-87-5, 1-Phenyl-2-propyn-1-ol 4685-14-7, Paraquat 7439-92-1, Lead, biological studies 7439-96-5, Manganese, biological studies 7440-02-0, Nickel, biological studies 7440-38-2, Arsenic, biological studies 7440-43-9, Cadmium, biological studies 7440-47-3, Chromium, biological studies 7440-50-8, Copper, biological studies 7440-66-6, Zinc, biological studies 12427-38-2, Maneb 12789-03-6, Chlordane 13194-48-4, Ethoprop 14998-27-7, Chlorite 15972-60-8, Alachlor 16088-73-6 16520-62-0, 4-Phenyl-1-butyne 19044-88-3, Oryzalin 21609-90-5, Leptophos 21725-46-2, Cyanazine 29232-93-7, Methylpyrimifos 50594-66-6, Acifluorfen 51218-45-2, Metolachlor 51338-27-3 53780-34-0, Mefluidide 55283-68-6, Ethalfluralin 58138-08-2, Tridiphane 66546-20-1 69806-40-2, Haloxyfop methyl 69806-50-4 81412-43-3, Tridemorph 81777-89-1, Dimethazone 87818-31-3, Cinmethylin
RL: ADV (Adverse effect, including toxicity); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

IT 59-67-6, Nicotinic acid, biological studies 63-91-2, L-Phenylalanine,

biological studies 100-21-0, 1,4-Benzenedicarboxylic acid, biological studies 103-82-2, Phenylacetic acid, biological studies 117-39-5, Quercetin 120-80-9, 1,2-Benzenediol, biological studies 138-52-3, Salicine 156-38-7, 4-Hydroxyphenylacetic acid 495-69-2, Benzoylglycine 525-82-6, **Flavone** 592-57-4, 1,3-Cyclohexadiene 7400-08-0, 4-Hydroxycinnamic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

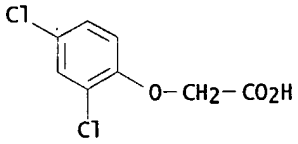
IT 56-40-6, Glycine, biological studies 56-65-5, biological studies 56-86-0, Glutamic acid, biological studies 64-19-7, Acetic acid, biological studies 9002-13-5, Urease 9016-17-5, Arylsulfatase 37341-58-5, Phytase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

~~IT 74-86-2, Acetylene, biological studies 7439-89-6, Iron, biological~~ studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(redn.; application of microbial toxicity tests in assessing ecotoxicol. risks of contaminants in soil and sediment)

L96 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:632985 HCAPLUS
DOCUMENT NUMBER: 117:232985
TITLE: Rare earth metals-containing compositions for growth stimulation and **disease** prevention, in **plants**.
INVENTOR(S): Ning, Jiagong; Li, Guangming; Liu, Sui; et al.
PATENT ASSIGNEE(S): Hunan Research Center of Rare Earth Agricultural Application, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 16 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1061888	A	19920617	CN 1990-106134	19901208
CN 1034273	B	19970319		

PRIORITY APPLN. INFO.: CN 1990-106134 19901208
AB The title compns. consists of rare earth compds., trace elements, plant growth regulators, buffers, surfactants, and membrane-forming agents. A compn. for rice consisted of Ce salt 0-40, La salt 0-40, La salt-Y salt mixt. 0-40, Zn and Zn salt 5-40, boric acid 5-20, **Fe** salt 0-20, Mn salt 0-40, carboxylic acid 5-20, starch 0-10, surfactant 0-15, growth regulator 0-1, and 2,4-D 0-1 g. Compared to conventional Ce salts, these formulations produced 30-80% higher yield.
IT **94-75-7**, 2,4-D, biological studies
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(growth promotion and **disease** prevention by compns. contg., in **plants**)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM A01N059-20
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
Section cross-reference(s): 5
ST rare earth **plant** growth stimulator; **disease** protection
plant rare earth
IT **Plant** hormones and regulators
RL: BIOL (Biological study)
(growth promotion and **disease** prevention by compns. contg.
rare earth metals and, in **plants**)
IT Carboxylic acids, biological studies
Rare earth metals, biological studies
Trace elements, biological studies
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(growth promotion and **disease** prevention by compns. contg., in **plants**)
IT **Plant disease**
(prevention of, by compns. contg. rare earth metals)
IT 77-06-5 **94-75-7**, 2,4-D, biological studies 557-34-6, Zinc acetate 1344-67-8, **Copper** chloride 7429-90-5, Aluminum, biological studies 7439-89-6, **Iron**, biological studies 7439-89-6D, **Iron**, salts 7439-91-0D, Lanthanum, salts 7439-95-4, Magnesium, biological studies 7439-96-5D, Manganese, salts 7439-98-7, Molybdenum, biological studies 7440-00-8D, Neodymium, salts 7440-10-0D, Praseodymium, salts 7440-32-6, Titanium, biological studies 7440-42-8, Boron, biological studies 7440-45-1D, Cerium, salts 7440-50-8, **Copper**, biological studies 7440-65-5D, Yttrium, salts 7440-66-6, Zinc, biological studies 7440-66-6D, Zinc, salts 7487-88-9, Magnesium sulfate, biological studies 7646-85-7, Zinc chloride, biological studies 7733-02-0, Zinc sulfate 7758-94-3, Ferrous chloride 7758-98-7, **Copper** sulfate, biological studies 7773-01-5, Manganese chloride 7785-87-7, Manganese sulfate 7786-30-3, Magnesium chloride, biological studies 9005-25-8, Starch, biological studies 10402-29-6, **Copper** nitrate 11098-84-3, Ammonium molybdate 14013-86-6, Ferrous nitrate
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(growth promotion and **disease** prevention by compns. contg., in **plants**)

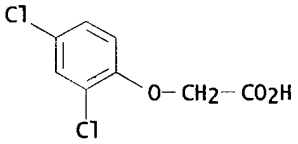
L96 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:588364 HCAPLUS
DOCUMENT NUMBER: 117:188364
TITLE: Comparison of plant hormone requirements in leaf tissues from hop stunt viroid-infected and uninfected hop plants
AUTHOR(S): Takahashi, T.; Fujiwara, S.; Chiba, K.; Yoshikawa, N.
CORPORATE SOURCE: Fac. Agric., Iwate Univ., Morioka, 020, Japan
SOURCE: Zeitschrift fuer Pflanzenkrankheiten und Pflanzenschutz (1992), 99(1), 62-70
CODEN: ZPFPAA; ISSN: 0340-8159
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The effects of various auxin/cytokinin ratios on the growth of leaf segments from hop stunt viroid-infected hop plants and healthy controls were studied in culture expts. Thus, c **mbinations** of

indole-3-acetic acid (I) with 6-benzylaminopurine (II) promoted tissue growth in both infected and uninfected leaves; for the former the effect was greater, however. Kinetin (III) combinati ns with I exhibited a similar, but smaller effect, as did combinations of indole-3-butyric acid and II or III and naphthalene-1-acetic acid with II or III. 2,4-Dichlorophenoxyacetic acid combinations with II or III resulted in almost as large a growth stimulation as I with II or III. Of I precursors tested with II, indole was particularly effective in promoting growth. Gibberellic acid in combination with II or I+II promoted growth, particularly in noninfected leaves. Rooting was depressed in infected leaf cultures, even under I+II combinations promoting leaf tissue growth. Effects of viroid infection on auxin metab., esp. on I are discussed.

IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BIOL (Biological study)
(in hop leaf growth and rooting, hop stunt viroid infection effect on)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC **11-5** (Plant Biochemistry)
Section cross-reference(s): 10

ST viroid infection hop growth auxin kinetin; hormone plant viroid infection hop growth

IT Leaf
Root
(growth of, in hop, hop stunt virus infection inhibition of, auxins and other hormones in)

IT Plant hormones and regulators
RL: BIOL (Biological study)
(in hop leaf growth and rooting, hop stunt viroid infection effect on)

IT Plant growth and development
(leaf growth, in hop, hop stunt virus infection inhibition of, auxins and other hormones in)

IT Plant hormones and regulators
RL: BIOL (Biological study)
(auxins, in hop leaf growth and rooting, hop stunt viroid infection effect on)

IT Viroid
(hop stunt, hop plant infection with, leaf growth and rooting inhibition by, auxins and other hormones in)

IT Plant growth and development
(rooting, in hop, hop stunt virus infection inhibition of, auxins and other hormones in)

IT Hop
(H. lupulus, **disease**, hop stunt virus infection, leaf growth and rooting inhibition by, auxins and other hormones in)

IT 77-06-5, Gibberellic acid 86-87-3, Naphthalene-1-acetic acid 87-51-4, Indole-3-acetic acid, biological studies **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies 133-32-4, Indole-3-butyric acid 525-79-1, Kinetin 1214-39-7, 6-Benzylaminopurine
RL: BIOL (Biological study)
(in hop leaf growth and rooting, hop stunt viroid infection effect on)

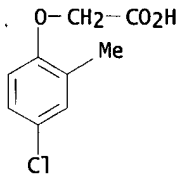
L96 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:510792 HCAPLUS
DOCUMENT NUMBER: 117:110792
TITLE: Potato yields and nitrate accumulation
AUTHOR(S): Abazov, A. Kh.; Urtaev, D. A.

CORPORATE SOURCE: NPO Kartofelevod., USSR
SOURCE: Khimizatsiya Sel'skogo Khozyaistva (1988-1992) (1991), (7), 17-19
CODEN: KSKHE7; ISSN: 0235-2516
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Spraying a DTPA complex of Fe + Cu + Zn + Co during flower bud formation, followed by spraying 10 g 2M-4Kh/ha in 30 kg/ha of a N 10-P 34 kg/ha urea-contg. liq. fertilizer 20-25 days before harvest or Mg chlorate 10-12 days before harvest, increased potato yield and decreased tuber NO3-. 2M-4Kh and Mg chlorate were ineffective under a late blight infection.

IT **94-74-6**, MCPA
RL: BIOL (Biological study)
(potato tuber nitrate control by haulm desiccation by)

RN 94-74-6 HCAPLUS
CN Acetic acid, (4-chloro-2-methylphenoxy)- (9CI) (CA INDEX NAME)



CC 19-5 (Fertilizers, Soils, and Plant Nutrition)
Section cross-reference(s): 5, 17

ST potato nitrate trace metal chlorate MCPA

IT Food contamination
(by nitrates, of potatoes, trace metal fertilization and haulm desiccation control of)

IT Potato
(fertilizer expt. with, with nitrate contamination control by trace metals and haulm desiccation)

IT **Plant** desiccants
(potato tuber nitrate control by)

IT **Phytophthora**
(potato tuber nitrate response to haulm desiccation and infection by)

IT Fertilizer experiment
(with trace metals, with potato, tuber nitrate in relation to)

IT Potato
(**disease**, late blight, tuber nitrate response to haulm desiccation and)

IT Trace elements, compounds
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(metals, complexes, fertilizer expt. with, with potato, tuber nitrate in relation to)

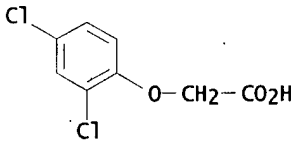
IT 67-43-6D, DTPA, trace metal complexes 15162-64-8 65229-17-6 114367-74-7 142198-25-2
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(fertilizer expt. with, with potato, tuber nitrate control in relation to)

IT 14797-55-8, Nitrate, biological studies
RL: BIOL (Biological study)
(in potatoes, trace metal fertilization and haulm desiccation control of)

IT **94-74-6**, MCPA 10326-21-3, Magnesium chlorate
RL: BIOL (Biological study)
(potato tuber nitrate control by haulm desiccation by)

L96 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:146049 HCAPLUS
DOCUMENT NUMBER: 116:146049
TITLE: Effect of mineral element, hormone and urea on stripe

disease infection in barley
AUTHOR(S): Mathur, A. K.; Bhatnagar, G. C.
CORPORATE SOURCE: Agric. Res. Stn., Dep. Plant Pathol., Jaipur, 302 018, India
SOURCE: Indian Journal of Mycology and Plant Pathology (1990), 20(2), 192-3
CODEN: IJMPAK; ISSN: 0303-4097
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Minerals, 2,4-D, and urea were evaluated against stripe of barley. All treatments (except Mo) were consistently superior to the control in reducing **disease** incidence. Zn and B were most effective, followed by Fe and Cu. The 2,4-D and urea treatments were less effective.
IT **94-75-7**, 2,4-D, biological studies
RL: BIOL (Biological study)
(stripe **disease** of barley response to, yield in relation to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 19
ST barley stripe **disease** mineral element dichlorophenoxyacetate; chlorophenoxyacetate barley stripe **disease**; urea barley stripe **disease**
IT Mineral elements
Plant hormones and regulators
RL: BIOL (Biological study)
(stripe **disease** of barley response to, yield in relation to)
IT Barley
(**disease**, stripe, control of, mineral elements and hormones and urea in relation to)
IT 57-13-6, Urea, biological studies **94-75-7**, 2,4-D, biological studies 7487-88-9, Magnesium sulfate, biological studies 7720-78-7, Ferrous sulfate 7733-02-0, Zinc sulfate 7758-98-7, **Copper** sulfate, biological studies 7785-87-7, Manganese sulfate 10043-35-3, Boric acid, biological studies 11098-84-3, Ammonium molybdate
RL: BIOL (Biological study)
(stripe **disease** of barley response to, yield in relation to)

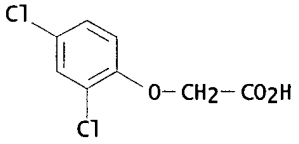
L96 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:213986 HCAPLUS
DOCUMENT NUMBER: 112:213986
TITLE: Application of growth substances and mineral nutrition affecting **disease** development and **glyceollin** production of soybean
AUTHOR(S): Chakraborty, U.; Chakraborty, B. N.; Purkayastha, R. P.
CORPORATE SOURCE: Cent. Life Sci., Univ. North Bengal, Darjeeling, 734 430, India
SOURCE: Folia Microbiologica (Prague, Czech Republic) (1989), 34(6), 490-7
CODEN: FOMIAZ; ISSN: 0015-5632
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of foliar application of growth substances and mineral nutrition of the host on the development of charcoal rot **disease** in soybean caused by Macrophomina phaseolina was tested. Among the eight

14

growth substances examd., gibberellic acid was most successful in reducing the **disease** severity, followed by IAA and 2,3,5-triiodobenzoic acid. Low concns. of these compds. stimulated (and high concns. inhibited) the mycelial growth of M. phaseolina in vitro. Substrate supplementation with different doses of N, P, K and Ca had varying effects on **disease** development. **Disease** was increased considerably by both excess and deficient N and also by deficient Ca, while excess Ca conferred partial **resistance**. **Glyceollin** contents of host **roots** before and after excess Ca and gibberellic acid (10 mg/L) treatments were estd. Both significantly increased **glyceollin** prodn. in infected **roots**. However, gibberellic acid induced **glyceollin** synthesis even in uninoculated **roots**. Changes in the host reaction towards increased **resistance** was correlated with increased **phytoalexin** prodn.

IT **94-75-7**, 2,4-D, biological studies
RL: BIOL (Biological study)
(charcoal rot **disease** of soybean inhibition by)

RN **94-75-7** HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC **11-5** (Plant Biochemistry)
ST soybean infection Macrophomina phytohormone nutrient
IT **Plant** nutrition
(mineral, charcoal rot **disease** of soybean development response to growth substances and)
IT Macrophomina phaseolina
(soybean infection by, growth substances and mineral nutrition effect on)
IT Mineral elements
RL: BIOL (Biological study)
(Macrophomina phaseolina growth response to, charcoal rot **disease** of soybean development in relation to)
IT Soybean
(**disease**, charcoal rot, phytohormones and mineral nutrition effect on)
IT 77-06-5, Gibberellic acid 87-51-4, IAA, biological studies 88-82-4, TIBA **94-75-7**, 2,4-D, biological studies
RL: BIOL (Biological study)
(charcoal rot **disease** of soybean inhibition by)
IT 86-87-3, NAA 120-23-0, 2-Naphthoxyacetic acid 525-79-1, Kinetin 1214-39-7, 6-Benzylaminopurine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(charcoal rot **disease** of soybean response to)
IT 57103-57-8D, derivs.
RL: FORM (Formation, nonpreparative)
(formation of, by soybean in charcoal rot **disease**, growth substances and mineral nutrition effect on)
IT 7440-09-7, Potassium, biological studies 7440-70-2, Calcium, biological studies 7723-14-0, Phosphorus, biological studies 7727-37-9, Nitrogen, biological studies
RL: BIOL (Biological study)
(Macrophomina phaseolina growth response to nutrient, charcoal rot **disease** of soybean in relation to)

L96 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1990:134371 HCAPLUS

DOCUMENT NUMBER: 112:134371
TITLE: Effect of various fungicides on mycelial growth, sporangial production, enzyme activity and control of **Phytophth ra leaf** blight of Colocasia esculenta L
AUTHOR(S): Aggarwal, A.; Mehrotra, R. S.
CORPORATE SOURCE: Bot. Dep., Kurukshetra Univ., Kurukshetra, 132 119, India
SOURCE: Acta Phytopathologica et Entomologica Hungarica (1988), 23(3-4), 401-14
CODEN: APEHEG; ISSN: 0238-1249
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In studies on the effect of 23 fungicides on mycelial growth of P. colocasiae, Apron 350 FW, Blitox, Blimix, Cuman-L, Demosan 65W, Dexon, Difolatan 80W, Fytolan, Hexaferb, Kitazin, Milton, Ridomil 25 WP and Syllit, showed 100% inhibition at different concns. All the fungicides had some effect on sporangial formation. Studying the effect of 8 fungicides on pectolytic and cellulolytic enzyme activities revealed that Ridomil-25 WP gave max. enzyme inhibition followed by Apron-350FW, Demosan-65W, Difolatan-80W, **Phytoalexin** 84, Blimix, Fytolan and Topsin-M. Out of 23 systemic and non-systemic fungicides, 8 were tried in the field, and Ridomil 25WP at 200 ppm was the most effective, followed by Apron 350FW (500 ppm), Demosan 65W (20 ppm), Difolatan 80W (50 ppm), **Phytoalexin**-84 (500 ppm), Blimix (100 ppm), Fytolan (200 ppm) and Topsin-M (500 ppm).

IT **2008-39-1**, Monosan
RL: BIOL (Biological study)
(**Phytophthora** colocasiae growth inhibition by)
RN 2008-39-1 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)-, compd. with N-methylmethanamine (1:1) (9CI) (CA INDEX NAME)

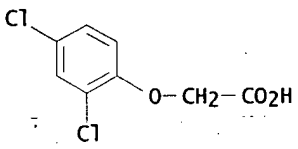
CM 1

CRN 124-40-3
CMF C2 H7 N

$H_3C-NH-CH_3$

CM 2

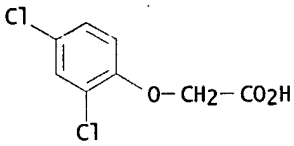
CRN 94-75-7
CMF C8 H6 Cl2 O3



CC 5-2 (Agrochemical Bioregulators)
ST fungicide **Phytophthora** Colocasia; sporulation
Phytophthora fungicide; taro **leaf** blight fungicide
IT **Phytophthora** colocasiae
(control of, on taro, sporulation and enzymes inhibition in)
IT **Phytoalexins**
RL: BIOL (Biological study)
(taro **leaf** blight control by, enzyme and sporulation inhibition in)
IT Fungicides and Fungistats

(agrochem., taro **leaf** blight control by, enzyme and sporulation inhibition in)
IT Colocasia esculenta
(**disease**, **leaf** blight, control of)
IT Enzymes
RL: BIOL (Biological study)
(pectolytic, of **Phytophthora** colocasiae, fungicide effect on)
IT 9012-54-8, Cellulase 9015-75-2 9032-75-1, Polygalacturonase 9033-35-6, Pectin methyl transeliminase 37213-52-8, Poly(Methyl galacturonase)
RL: BIOL (Biological study)
(of **Phytophthora** colocasiae, fungicide effect on)
IT 1332-40-7, Fytolan 2425-06-1, Difolatan 2675-77-6, Demosan 23564-05-8 56448-75-0, Blimix 57837-19-1, Ridomil
RL: BIOL (Biological study)
(taro **leaf** blight control by, enzyme and sporulation inhibition in)
IT 82-68-8, Brassicol 133-06-2, Hexacap 137-30-4, Cuman-L 140-56-7, Dexon 2008-39-1, Monosan 2439-10-3, Sylit 8018-01-7, Dithane M-45 8066-21-5, Miltox 10605-21-7 12122-67-7, Dithane Z-78 13286-32-3, Kitazin 14484-64-1, Hexaferb 17804-35-2, Benlate 81412-43-3, Calixin
RL: BIOL (Biological study)
(**Phytophthora** colocasiae growth inhibition by)

L96 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:404427 HCAPLUS
DOCUMENT NUMBER: 111:4427
TITLE: Low concentrations of **phytoalexins** correlate with **resistance** in regenerated **plants** from meristem cultures of Vicia faba L
AUTHOR(S): Thynn, M.; Wolff, A.; Goerge, E.; Werner, D.
CORPORATE SOURCE: Bot. Inst., Philipps Univ., Marburg, D-3550, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Naturforschung, C: Journal of Biosciences (1989), 44(3-4), 237-42
CODEN: ZNCBDA; ISSN: 0341-0382
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In tissue cultures from shoot apex meristems with **leaf** primordias of V. faba, addn. of low concn. of auxins (0.01 mg/L) induced regeneration of whole **plants** at high frequency (100%). The **combination** of NAA and kinetin or GA3 also induced a high yield of **plant** regeneration. Regenerated **plants** from various cultivars on a medium with 2,4-D (0.01 mg/L) were infected with Botrytis cinerea, **Phytophthora** megasperma and Rhizoctonia solani. Accumulation of **phytoalexins**, ethylene prodn. and the **resistance** to fungal **diseases** were studied. In general, prodn. of **phytoalexins** occurred at a high level in all cultivars infected with B. cinerea. Ethylene prodn. varied more in the 7 cultivars studied than **phytoalexin** accumulation. No cultivar was **resistant** to B. cinerea. The highest **resistance** and the lowest concn. of **phytoalexin** was found after infection by R. solani, and **phytoalexin** accumulation and **resistance** were intermediate in **plants** infected by P. megasperma. The data suggest that only low to medium concns. of **phytoalexin** in faba beans are correlated with **resistance** of regenerated **plants**.
IT **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies
RL: BIOL (Biological study)
(regeneration of Vicia faba from meristem cultures in response to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-5 (Plant Biochemistry)
ST Vicia meristem culture auxin regeneration; **phytoalexin** Vicia regnerated **plant** fungal **resistance**; Botrytis **resistance** Vicia ethylene **phytoalexin**; Rhizoctonia **resistance** Vicia regnerated **plant phytoalexin**; **Phytophthora resistance** Vicia regnerated **plant phytoalexin**
IT **Plant** tissue culture
(of Vicia faba meristem, phytohormone effects on, **phytoalexins** and **resistance** to fungal infection of regenerated **plants** in relation to)
IT Broad bean
(**phytoalexin** accumulation and **resistance** to fungal infection by regenerated **plants** from meristem cultures of)
IT Botrytis cinerea
Phytophthora megasperma
Rhizoctonia solani
(**resistance** of Vicia faba cultivars regenerated from meristem culture to, **phytoalexin** accumulation in relation to)
IT **Phytoalexins**
RL: BIOL (Biological study)
(Vicia faba cultivars regenerated from meristem culture, in response to fungal infection, fungal **resistance** in relation to)
IT **Plant** hormones and regulators
RL: BIOL (Biological study)
(auxins, regeneration of Vicia faba meristem cultures in response to)
IT 20079-30-5, Wyerone 20450-52-6, Wyerol 20450-54-8, Dihydrowyerone 117783-52-5, Wyeronic acid
RL: FORM (Formation, nonpreparative)
(formation of, by Vicia faba cultivars regenerated from meristem culture, fungal **resistance** in relation to)
IT 74-85-1, Ethylene, biological studies
RL: FORM (Formation, nonpreparative)
(formation of, by Vicia faba cultivars regenerated from meristem culture, in response to infection with Botrytis cinerea)
IT 77-06-5 86-87-3, 1-Naphthaleneacetic acid 87-51-4, Indole-3-acetic acid, biological studies **94-75-7**, 2,4-Dichlorophenoxyacetic acid, biological studies 525-79-1, Kinetin 1214-39-7, 6-Benzyl-aminopurine
RL: BIOL (Biological study)
(regeneration of Vicia faba from meristem cultures in response to)

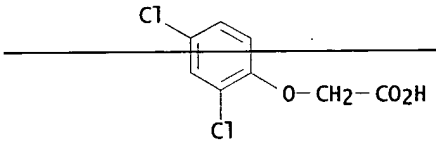
L96 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1984:98181 HCAPLUS
DOCUMENT NUMBER: 100:98181
TITLE: Control of brown spot **disease** of rice seedlings by treatment with a selected group of chemicals
AUTHOR(S): Giri, D. N.; Sinha, A. K.
CORPORATE SOURCE: Dep. Plant Pathol., Bidhan Chandra Krishi Viswavidyalaya, Kalyani, 741235, India
SOURCE: Zeitschrift fuer Pflanzenkrankheiten und Pflanzenschutz (1983), 90(5), 479-87
CODEN: ZPFPAA; ISSN: 0340-8159
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Chems. known to induce the formation of **phyt alexins**, i.e. Na malonate [141-95-7], Na molybdate, Na iodoacetate [305-53-3], Na2SO3,

NaF, as well as DL-methionine [59-51-8] and the phytohormones IAA [87-51-4] and 2,4-D [94-75-7], reduced brown spot **disease** symptom expression in-pot-grown rice inoculated with Helminthosporium oryzae at 2 days after the treatment. Similar results were shown by root dip at transplanting and by wet seed treatment. **Leaf** diffusates from noninoculated treated seedlings had no effect on germ tube growth of H. oryzae. However, diffusates from inoculated, treated **plants** showed germ tube growth inhibition, when compared to diffusates from untreated inoculated **plants**.

IT **94-75-7**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(brown spot **disease** expression redn. by, in rice)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-2 (Agrochemical Bioregulators)

ST Helminthosporium rice **phytoalexin** induction; malonate rice Helminthosporium; molybdate rice Helminthosporium; iodoacetate rice Helminthosporium

IT **Phytoalexins**
RL: BIOL (Biological study)
(inducers of, brown spot **disease** expression response to treatment by, in rice)

IT Helminthosporium
(rice infection by, **phytoalexin**-inducers and growth regulators effect on)

IT Rice
(**disease**, brown spot, **phytoalexin**-inducers and growth regulators effect on)

IT 59-51-8 87-51-4, reactions **94-75-7**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(brown spot **disease** expression redn. by, in rice)

IT 141-95-7 305-53-3 1313-82-2, reactions 7631-95-0 7681-49-4, reactions
RL: BIOL (Biological study)
(**phytoalexin** induction by, brown spot **disease** expression redn. by, in rice)

L96 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1982:521946 HCAPLUS

DOCUMENT NUMBER: 97:121946

TITLE: Metabolism of 2,4-dichlorophenoxyacetic acid in 2,4-dichlorophenoxyacetic acid-**resistant** soybean callus tissue

AUTHOR(S): Davidonis, Gayle H.; Hamilton, Robert H.; Mumma, Ralph O.

CORPORATE SOURCE: Pestic. Res. Lab., Pennsylvania State Univ., University Park, PA, 16802, USA

SOURCE: Plant Physiology (1982), 70(1), 104-7
CODEN: PLPHAY; ISSN: 0032-0889

DOCUMENT TYPE: Journal

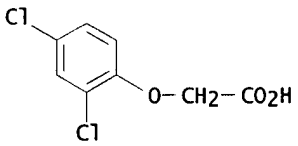
LANGUAGE: English

AB Three 2,4-D [94-75-7]-**resistant** root callus tissue lines of Glycine max var Acme were derived by culturing callus tissue 2-6 mo on 40 mg/L 2,4-D and designated 40R, 40B, and 40C. Tissue line 40R had a lower level of 2,4-D uptake in 2-wk-old tissue which disappeared in 3.5-wk-old tissue and less free 2,4-D following incubation for 24 h with [1-14C]2,4-D. This tissue line accumulated more

hydroxylated glycosides of 2,4-D than did nonresistant tissue. Tissue line 40B showed no difference in uptake of 2,4-D when compared to nonresistant tissue, but it did contain less free 2,4-D and more hydroxylated glycosides. The metab. of 2,4-D in the 40C tissue line did not differ significantly from nonresistant tissue, although uptake was less. The 40R line reverted to the same 2,4-D sensitivity as Acme **root** callus following 6 transfers on 10 .mu.M naphthaleneacetic acid [86-87-3] medium. The altered 2,4-D uptake and metab. characteristic of 40R were also lost. The levels of amino acid conjugates of 2,4-D in the **resistant root** callus tissue lines were either lower or not significantly different from the Acme tissue lines. Therefore, variations in uptake and metab. of 2,4-D do not wholly explain the **resistance** of the derived tissue lines, and perhaps modification of the active site or compartmentation is involved.

IT **94-75-7**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metab. of, in soybean callus culture, herbicidal tolerance in relation to)

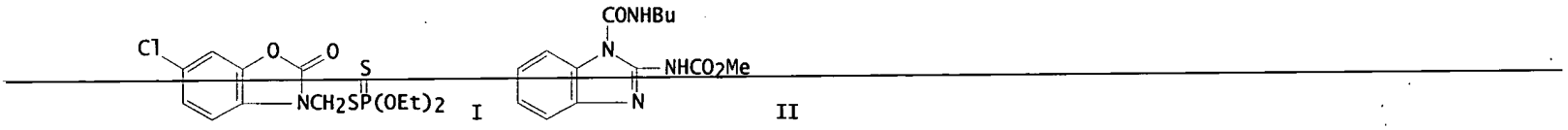
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-3 (Agrochemical Bioregulators)
Section cross-reference(s): 11
ST dichlorophenoxyacetate metab soybean callus **resistance**
IT Soybean
(2,4-D metab. by 2,4-D-**resistant** callus tissue of)
IT **Plant** tissue culture
(2,4-D metab. by soybean callus in, herbicidal tolerance in relation to)
IT **Aglycons**
RL: BIOL (Biological study)
(dichlorophenoxyacetate metabolites, in soybean callus culture, herbicidal tolerance in relation to)
IT Glycosides
RL: BIOL (Biological study)
(of dichlorophenoxyacetate, in soybean callus culture, herbicidal tolerance in relation to)
IT 3004-84-0
RL: BIOL (Biological study)
(**aglycon**, of soybean callus tissue, 2,4-D metab. and herbicidal tolerance in relation to)
IT **94-75-7**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metab. of, in soybean callus culture, herbicidal tolerance in relation to)
IT 86-87-3 93-76-5
RL: BIOL (Biological study)
(soybean callus culture growth response to, dichlorophenoxyacetate metab. in relation to)
IT 32773-59-4 35144-55-9
RL: BIOL (Biological study)
(soybean callus tissue metabolite, dichlorophenoxyacetate metab. and herbicidal tolerance in relation to)

L96 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1981:437062 HCAPLUS

DOCUMENT NUMBER: 95:37062
TITLE: Development of an integrated system to protect apple orchards from pests and diseases
AUTHOR(S): Isin, M. M.
CORPORATE SOURCE: Nauchno-Proizvod. Ob'edin. "Almaly", USSR
SOURCE: Vestnik Sel'skokhozyaistvennoi Nauki Kazakhstana (1981), (4), 44-50
CODEN: VSNKBD; ISSN: 0042-4684
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI



AB Spraying apples with 0.5% entobacterin 3 plus 0.02% phosalone (I) [2310-17-0] decreased fruit damage by codling moth by 92.4%. This I dose, 10-fold decreased in comparison with I-alone treatment, 3.5-fold increased the beneficial predator population in comparison with combining the entobacterin-I treatment with 3 releases of Trichogramma, totaling in 5500 wasps/tree, and increased the Trichogramma effectiveness from 4.7 to 6.7%. Adding 1% colloidal S or 0.5% Thiovit [7704-34-9], to the entobacterin-I mixt. controlled powdery mildew and fruit mites, whereas on addn. 0.5% Cu oxycholoride, zineb [12122-67-7], or khomitsin [8066-21-5] controlled apple scab without killing the beneficial insects. Shifting the entobacterin-insecticide sprayings from day- to night decreased the apple damage by codling moth from 12 to 5.6%. Nighttime spraying prevented apple leaf burn by chlorophos [52-68-6]. Replacing soil cultivation by planting perennial grasses decreased the mite infestation from 3.4 to 2.1 mites/leaf, fruit damage by codling moth from 15 to 12.1%, the percentage of cytosporosis-infected trees from 92.8 to 55.2% and the intensity of cytosporosis infection from 52.7 to 23.4%. At 50, 100, and 150 kg N/ha,cytosporosis infection was 12.5, 28.7, and 38.8%, resp., under concomitant application of 50 kg P plus 50 kg K/ha, and even more without the P-K fertilization. K increased the resistance to cytosporosis more than did P. Application of 50 kg N plus 50 kg P/ha, alone or with 5 kg K/ha, decreased the mite infestation from 12.8 to 6.7 and 3.6 mites/leaf, resp. Weed control in apple tree rows with 8 kg simazine [122-34-9] or 1.5 kg 2,4-D amine [2008-39-1]/ha decreased cytosporosis infection intensity from 21.0 to 11.3%. Wintering apple scab was controlled by 10% NH4NO3 or KNO3, or 7% urea. Mite and leaf-eating insect control stimulated apple spur and foliage surface growth and increased fruit vitamin C [50-81-7] and dry matter. Fundazol (II) [17804-35-2] controlled most fungi and the fruit mites.

IT **2008-39-1**
RL: BIOL (Biological study)
(apple cytosporosis response to weed control by)

RN 2008-39-1 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)-, compd. with N-methylmethanamine (1:1) (9CI) (CA INDEX NAME)

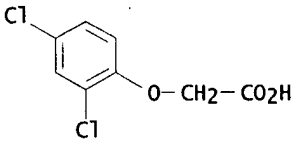
CM 1

CRN 124-40-3
CMF C2 H7 N

$H_3C-NH-CH_3$

CM 2

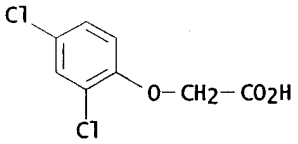
CRN 94-75-7
CMF C8 H6 Cl2 O3



CC 5-4 (Agrochemicals)
Section cross-reference(s): 19
ST apple acaricide insecticide fungicide herbicide
IT Genetics
(apple cytosporosis resistance and)
IT Irrigation
Weed control
(apple cytosporosis response to)
IT Cytospora
(apple resistance to, increase of)
IT Fertilizers
RL: BIOL (Biological study)
(apple scab control by)
IT Trichogramma
Entobacterins
RL: BIOL (Biological study)
(codling moth control by, on apples, phosalone enhancement of)
IT Codling moth
(control of, biol. and chem.)
IT Apple scab
(control of, by fungicides and fertilizers)
IT Erysiphaceae
Fruit mite
(control of, on apples)
IT Apple
(**diseases** and pests control on, integration of)
IT Fungicides and Fungistats
Insecticides
(for apples)
IT **Plant** growth and development
(fundazol and phosalone stimulation of, in apples)
IT Ecology
(in apple **disease** and pesticide integrated control)
IT Apple
(**disease**, cytosporosis, resistance to, increase of)
IT Fertilizers
RL: BIOL (Biological study)
(nitrogen-phosphorus-potassium, apple cytosporosis response to)
IT 122-34-9 **2008-39-1**
RL: BIOL (Biological study)
(apple cytosporosis response to weed control by)
IT 1332-40-7 8066-21-5 12122-67-7
RL: BIOL (Biological study)
(apple scab control by)
IT 7704-34-9, biological studies 17804-35-2
RL: BIOL (Biological study)
(fungi and fruit mites control by, on apples)
IT 2310-17-0

RL: BIOL (Biological study)
(insect and mite control by, on apples)
IT 52-68-6
RL: BIOL (Biological study)
(insect control by, on apples)
IT 50-81-7, biological studies
RL: BIOL (Biological study)
(of apple fruit, pest control by phosalne increase of)

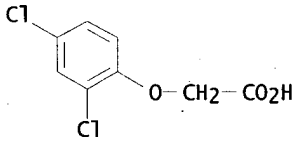
L96 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:439307 HCAPLUS
DOCUMENT NUMBER: 93:39307
TITLE: Studies on the foot-rot and leaf-rot diseases of pan (Piper betel Linn.). XI. Effect of plant growth-regulators on endogenous mycelial respiration and growth of Phytophthora parasitica var. Piperina
AUTHOR(S): Chaurasia, S. C.
CORPORATE SOURCE: Dep. Bot., Grad. Coll., Seoni, 480661, India
SOURCE: Biochemistry and Experimental Biology (1979), 15(1), 17-24
CODEN: BEXBBO; ISSN: 0366-0060
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Of 5 plant growth-regulators tested in vitro at 1-100 ppm, gibberellic acid [77-06-5] caused the highest respiration inhibition of P. parasitica piperina mycelium. Indole-3-propionic acid [830-96-6] was most inhibitory for radial growth. The fungus was isolated from diseased pan.
IT 94-75-7, biological studies
RL: BIOL (Biological study)
(mycelial respiration and growth inhibition by, in Phytophthora parasitica piperina)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-2 (Agrochemicals)
ST plant growth regulator Phytophthora
IT Microorganism respiration
(by Phytophthora parasitica piperina, plant growth-regulators inhibition of)
IT Plant hormones and regulators
RL: BIOL (Biological study)
(mycelial respiration and growth inhibition by, in Phytophthora parasitica piperina)
IT Phytophthora parasitica piperina
(mycelial respiration and growth of, plant growth regulators inhibition of)
IT 77-06-5 87-51-4, biological studies 94-75-7, biological studies 133-32-4 830-96-6
RL: BIOL (Biological study)
(mycelial respiration and growth inhibition by, in Phytophthora parasitica piperina)

L96 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1979:552620 HCAPLUS
DOCUMENT NUMBER: 91:152620
TITLE: Expression of disease reaction types in

soybean callus from resistant and susceptible **plants**
AUTHOR(S): Holliday, M. J.; Klarman, W. L.
CORPORATE SOURCE: Dep. Bot., Univ. Maryland, College Park, MD, 20742, USA
SOURCE: Phytopathology (1979), 69(6), 576-8
CODEN: PHYTAJ; ISSN: 0031-949X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Conditions influencing expression of **disease** reaction types were examd. in calluses derived from soybean **plants** resistant (cultivar Cutler 71) or susceptible (cultivar Cutler) to race 1 of **Phytophthora** megasperma sojae. Cutler 71 calluses were colonized less than those of Cutler when both were grown on medium contg. 6 or 10 mg of 2,4-D/L and incubated at 16 or 20.degree. prior to and following inoculation with P. megasperma sojae zoospores. Differences between colonization rates of Cutler and Cutler 71 calluses were greater in callus sections 5 mm thick than in thicker or thinner sections. Differences in colonization rates remained high with inoculum doses varying from 50 to 1000 zoospores per callus section. Sections of Cutler and Cutler 71 calluses 5 mm thick were colonized equally by race 3 of **Phytophthora** which is pathogenic to **plants** of both cultivars. No combinations of incubation temps., 2,4-D concns., sizes of calluses, or nos. of zoospores used for inoculum resulted in Cutler 71 calluses with the nearly abs. resistance to race 1 of **Phytophthora** found in whole **plants** of that cultivar.
IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(soybean calluses culture in media contg., colonization rates in relation to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-2 (Agrochemicals)
ST soybean cultivar callus **Phytophthora**; genotype soybean **Phytophthora**
IT Soybean
(**disease** reaction types in genotypes of)
IT **Phytophthora** megasperma sojae
(soybean cultivars susceptibility to, parameters of)
IT Genetics
(soybean resistance and susceptibility to **Phytophthora** megasperma sojae in relation to)
IT **Plant** tissue culture
(**Phytophthora** megasperma sojae susceptibility of soybean callus, genotypes in relation to)
IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(soybean calluses culture in media contg., colonization rates in relation to)

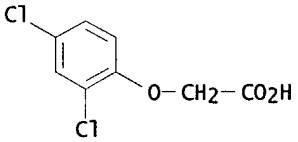
L96 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1979:19203 HCAPLUS
DOCUMENT NUMBER: 90:19203
TITLE: Modification of the **disease** resistance of tobacco callus tissues by cytokinins
AUTHOR(S): Haberlach, Geraldine T.; Budde, Allen D.; Sequeira, Luis; Helgeson, John P.

CORPORATE SOURCE: Dep. Plant Pathol., Univ. Wisconsin, Madison, WI, USA
SOURCE: Plant Physiology (1978), 62(4), 522-5
CODEN: PLPHAY; ISSN: 0032-0889
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effects of differing cytokinin and auxin concns. on resistance of tobacco (Nicotiana tabacum) tissue cultures to race 0 of **Phytophthora** parasitica var nicotianae were examd. With 1 .mu.M 2,4-D tissues from resistant cultivars exhibited a "hypersensitive" reaction to zoospores of the fungus and subsequently were colonized only slightly. With susceptible cultivars or with tissues from resistant cultivars supplied with higher cytokinin levels (e.g.) mM kinetin), this hypersensitive reaction did not occur and tissues were heavily colonized. Benzylaminopurine and kinetin were particularly effective in eliminating both the hypersensitive reaction and **disease** resistance. Zeatin and 6-(3-methyl-2-butenylamino)purine were less effective. Increases in indoleacetic acid levels reversed the effects of high cytokinin concns. The balance of phytohormones apparently controls the host response to the fungus; thus, in this system, resistance or susceptibility can be studied without changing either host or fungal genotype.

IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(tobacco callus **disease** resistance response to)

RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 11-5 (Plant Biochemistry)
ST tobacco **disease** resistance cytokinin; **Phytophthora** resistance tobacco cytokinin; auxin tobacco resistance **Phytophthora**

IT Tobacco
(**disease** resistance in callus tissues of, cytokinin modification of)

IT **Plant** tissue culture
(**disease** resistance of, of tobacco, cytokinin modification of)

IT **Phytophthora** parasitica nicotianae
(tobacco callus tissue resistance to, modification by cytokinins)

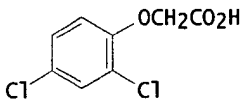
IT **Plant** hormones and regulators
RL: BIOL (Biological study)
(auxins, modification of **disease** resistance in tobacco callus tissues by)

IT **Plant** hormones and regulators
RL: BIOL (Biological study)
(cytokinins, modification of **disease** resistance in tobacco callus tissues by)

IT 87-51-4, biological studies **94-75-7**, biological studies
525-79-1 1214-39-7 1637-39-4 2365-40-4
RL: BIOL (Biological study)
(tobacco callus **disease** resistance response to)

L96 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1978:437966 HCAPLUS
DOCUMENT NUMBER: 89:37966
TITLE: Activity of certain enzymes of phenol metabolism during the herbicidal treatment of **plants**
AUTHOR(S): Volynets, A. P.; Pal'chenko, L. A.
CORPORATE SOURCE: Inst. Eksp. Bot., Minsk, USSR

SOURCE: Mater. Biokhim. Konf. Pribalt. Resp. B. SSR, 5th (1976), Volume 2, 156-7. Editor(s): Sibul, I. K. Akad. Nauk Est. SSR: Tallinn, USSR.
CODEN: 38BKAW
DOCUMENT TYPE: Conference
LANGUAGE: Russian
GI

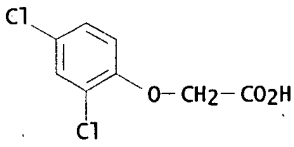


I

AB Soil application of 0.5 or 5 kg 2,4-D (I) [94-75-7], or 3.0 or 30 kg TCA [76-03-9]/ha stimulated phenylalanineammonia lyase [9024-28-6] and .beta.-glucosidase [9001-22-3], and raised the contents of **flavone aglycons** and **flavonols** in herbicide-**resistant** lupine. In a herbicide-susceptible cultivar the increase in the phenylalanineammonia lyase activity and **flavonoid** content was less, and .beta.-glucosidase was inhibited by the herbicides.

IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(lupine phenol metab. response to)

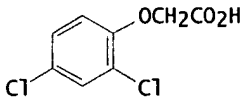
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-3 (Agrochemicals)
ST lupine phenol metab dichlorophenoxyacetate TCA
IT Lupine
(2,4-D and TCA effect on phenol metab. of)
IT **Aglycons**
Flavones
Flavonoids
RL: BIOL (Biological study)
(of lupine, 2,4-D and TCA effect on)
IT **Plant** metabolism
(of phenols, by lupine, 2,4-D and TCA effect on)
IT **Flavones**
RL: BIOL (Biological study)
(hydroxy, of lupine, 2,4-D and TCA effect on)
IT 76-03-9, biological studies **94-75-7**, biological studies
RL: BIOL (Biological study)
(lupine phenol metab. response to)
IT 9001-22-3 9024-28-6
RL: BIOL (Biological study)
(of lupine, 2,4-D and TCA effect on)

L96 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1977:578664 HCAPLUS
DOCUMENT NUMBER: 87:178664
TITLE: Metabolism of 2,4-dichlorophenoxyacetic acid by wheat cell suspension cultures
AUTHOR(S): Bristol, Douglas W.; Ghanuni, Ahmed Murad; Oleson, Arland E.
CORPORATE SOURCE: Dep. Biochem., North Dakota State Univ., Fargo, ND,

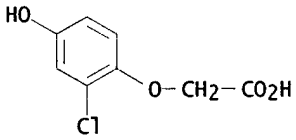
USA
SOURCE: Journal of Agricultural and Food Chemistry (1977), 25(6), 1308-14
CODEN: JAFCAU; ISSN: 0021-8561
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



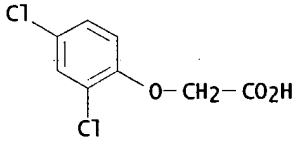
I

AB Wheat cells in suspension culture absorbed 14C-labeled 2,4-D (I) [94-75-7] rapidly from B5 nutrient medium. After 4 days of incubation, the distribution of radiolabel in the culture system reached a steady state. After 6 to 8 days, the major metab. pathway for I involved ring hydroxylation followed by conjugation with sugars since over 37% of the applied radiolabel was present in the cells as H2O-sol./Et2O-insol. metabolites. Following hydrolysis, extraction into Et2O, and sepn. by TLC, 4-hydroxy-2,5-dichlorophenoxyacetic acid [2639-78-3] was identified as the major **aglycone** present. Lesser amts. of 4-hydroxy-2,3-dichlorophenoxyacetic acid [3004-84-0], 4-hydroxy-2-chlorophenoxyacetic acid [**7417-87-0**], and I were detected. Et2O-sol. amino acid conjugates and free I present in the cells after 6 to 8 days represented only 17 and 13%, resp., of the applied radioactivity. A considerable amt. (12%) of the applied radioactivity was bound to insol. ceklular tissue while 10% was present in the extracellular medium. Apparently 9.4% was lost from the system as a volatile metabolite. The results of this model study are compared with those reported for other **plants** in tissue culture and support the hypothesis that the **resistance** of some **plants** to the herbicidal action of I is related to their species specific ability to accomplish detoxification by conversion to H2O-sol. metabolites.

IT **7417-87-0**
RL: FORM (Formation, nonpreparative)
(formation of, from 2,4-D, by wheat in cell culture)
RN 7417-87-0 HCAPLUS
CN Acetic acid, (2-chloro-4-hydroxyphenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)

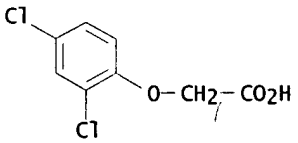


IT **94-75-7**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metab. of, by wheat, in cell culture)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 4-4 (Toxicology)
ST wheat culture dichlorophenoxyacetate metab
IT Wheat
(2,4-D metab. by, in cell culture)
IT 2639-78-3 3004-84-0 **7417-87-0**
RL: FORM (Formation, nonpreparative)
(formation of, from 2,4-D, by wheat in cell culture)
IT **94-75-7**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metab. of, by wheat, in cell culture)

L96 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1977:562591 HCAPLUS
DOCUMENT NUMBER: 87:162591
TITLE: Effect of growth regulators on the development of collar rot **disease** caused by the fungus **Phytophthora** cactorum in apple trees
AUTHOR(S): Plich, M.
CORPORATE SOURCE: Res. Inst. Pomol., Skierniewice, Pol.
SOURCE: Fruit Science Reports (1976), 3(3), 33-42
CODEN: FSREDB; ISSN: 0137-1479
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The auxins, IAA [87-51-4], NAA [86-87-3], and 2,4-D [**94-75-7**], BA [1214-39-7], and abscisic acid [21293-29-8] modified the susceptibility of apple trees to P. cactorum, but the effects obtained were dependent on the lapse of time between the inoculation of the trees with the fungus and the growth regulator application. Auxin treatment 10 and 4 days before infection attenuated **disease** development whereas BA greatly increased the size of necroses. These growth regulators had no influence when applied 4 days after infection. Gibberellic acid [77-06-5] did not produce a significant effect, but abscisic acid administered both before and after infection caused larger necroses. The effect of BA and abscisic acid were, however, dependent on the variety of apple as well as on the time of expt. performance. Growoth regulators active in vivo conditions showed relatively weak or no fungitoxic affects when applied in vitro. Growth regulators did not directly affect the development of the pathogen in the host tissues but they changed the susceptibility of apple trees by way of their influence on **plant** metab.
IT **94-75-7**, biological studies
RL: BIOL (Biological study)
(apple collar rot **disease** response to)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 5-2 (Agrochemicals)
ST growth regulator apple collar rot; **Phytophthora** apple **plant** hormone
IT **Plant** hormones and regulators
RL: BIOL (Biological study)
(apple collar rot **disease** response to)
IT **Phytophthora** cactorum
(apple infestation with, **plant** hormones effect on)
IT Apple
(**disease**, collar rot, **plant** hormones effect on)
IT 77-06-5 86-87-3 87-51-4, biological studies **94-75-7**, biological studies 1214-39-7 21293-29-8

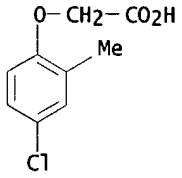
RL: BIOL (Biological study)
(apple collar rot **disease** response to)

L96 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1970:413407 HCAPLUS
DOCUMENT NUMBER: 73:13407
TITLE: Effect of herbicides on **isoflavone** level in lupine **roots**
AUTHOR(S): Laman, M. A.; Valynets, A. P.; Mashtakoy, S. M.
CORPORATE SOURCE: Inst. Eksp. Bot., Minsk, USSR
SOURCE: Vestsi Akademii Navuk BSSR, Seryya Biyalagichnykh Navuk (1969), (6), 30-4
CODEN: VABBA3; ISSN: 0002-3558
DOCUMENT TYPE: Journal
LANGUAGE: Belorussian

AB Yellow lupine **plants** of the varieties Belorusskii (A) and Baravlyanskii (B) were treated with solns. of Na trichloroacetate, dalapon, and the Na salt of 2,4-D that were poured on the soil surface. One, 5, and 11 days after application of the herbicides, samples of the **plant roots** were treated with steam, dried at 50-60.degree., and on grinding extd. with ether and then with 80% EtOH. The extd. material was sepd. by two-dimensional paper chromatog. by using iso-BuOH-AcOH-H2O (4:1:5) and 5% AcOH as solvents. Spots corresponding to 5 substances (1-5) were obtained. These substances, were identified as **isoflavone** polyphenols. The high soly. of 1-5 in solvent mixts. contg. H2O indicated that the **isoflavone** derivs. were present in the form of glycosides. The uv spectra showed that an OH group in position 7 was substituted with the sugar residue, while an OH group in position 5 was free. The content of **isoflavones** 1-5 in the **roots** depended on the length of time during which the herbicide acted and the **resistance** of the lupine variety to herbicides. Whereas in the **resistant** variety A the content of 1-5 24 hr after application of Cl3CCO2Na and dalapon decreased by 7 and 11.4%, resp., vs. untreated controls, it increased by 16 and 32%, resp., in variety B. Apparently, 1-5 act in the **roots** of lupines as antagonists of indolylacetic acid.

IT **3653-48-3**
RL: BIOL (Biological study)
(**isoflavone** formation by **roots** in response to, soil treatment with)

RN 3653-48-3 HCAPLUS
CN Acetic acid, (4-chloro-2-methylphenoxy)-, sodium salt (9CI) (CA INDEX NAME)

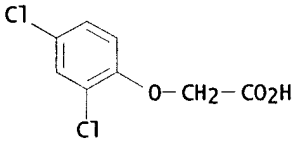


● Na

CC 18 (Plant Growth Regulators)
ST **isoflavones** lupine herbicides; lupine **isoflavones** herbicides; herbicides lupine **isoflavones**; **roots** lupine **isoflavones**; dalapon lupine **isoflavones**; chloroacetate lupine **is flavones**
IT Soils
(**isoflav ne** formation in **r ts** in herbicide-treated)
IT Lupines

(isoflavones from roots of, herbicide effect on)
IT Isoflavone, derivs.
RL: FORM (Formation, nonpreparative)
(formation of, by roots in herbicide-treated soils)
IT 650-51-1
RL: BIOL (Biological study)
(isoflavone formation by roots in response to soil treatment with)
IT 75-99-0 3653-48-3
RL: BIOL (Biological study)
(isoflavone formation by roots in response to, soil treatment with)

L96 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1956:61867 HCAPLUS
DOCUMENT NUMBER: 50:61867
ORIGINAL REFERENCE NO.: 50:11593h-i
TITLE: Downy mildew of onions; results of further spray trial
AUTHOR(S): Doepel, R. F.
SOURCE: J. Dept. Agr. W. Australia (1956), 5, 185-6,189-90
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 50, 2909b. The effectiveness of zineb fungicide sprays for controlling downy mildew of onions was confirmed by further trials in which zineb (1 1/2 lb./100 gal.) was compared with Cu oxychloride (3 1/3 lb./100 gal.). Plots sprayed with zineb yielded 20% more marketable onions than the Cu oxychloride and control plots, and the disease was also greatly reduced in seed crops. Use of Triton B1956 spreader (6 fluid oz./100 gal.) improved the coverage of plants.
IT 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-
(in mushroom-mildew control)
RN 94-75-7 HCAPLUS
CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 15A (Pesticides and Crop-Control Agents)
IT Peronosporaceae
(control of, on onions)
IT Onions
(downy-mildew control on)
IT Fungicides or Fungistats
(for mildew, on onions)
IT Roccal
(in mushroom-mildew control)
IT Copper chlorides
(basic, in downy-mildew control on onions)
IT Carbamic acid, ethylenebis[dithio-, disodium and Zn salts
Carbamic acid, methyldithio-, sodium salt
Glutarimide, 3-[2-(3,5-dimethyl-2-oxocyclohexyl-2-hydroxyethyl]-
(Actidione)
Hydrazine, sulfate, Cu complex
(in mushroom-mildew control)
IT Carbamic acid, ethylenebis[dithio-, zinc salt
(in onion-downy-mildew control)
IT 14798-03-9, Ammonium
(compds., substituted, alkylbenzyldimethyl-chlorides, in mushroom-mildew control)
IT 148-24-3, 8-Quinolinol

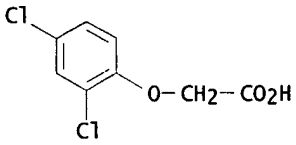
(copper complexes, in mushroom-mildew control)
IT 50-00-0, Formaldehyde 51-28-5, Phenol, 2,4-dinitro- 57-13-6, Urea 79-57-2, Oxytetracycline 82-68-8, Benzene, pentachloronitro- 87-86-5, Phenol, pentachloro- 93-23-2, Isoquinolinium, 2-dodecyl-, bromide **94-75-7**, Acetic acid, (2,4-dichlorophenoxy)- 100-97-0, Hexamethylenetetramine 101-05-3, s-Triazine, 2,4-dichloro-6-o-chloroanilino- 117-18-0, Benzene, 1,2,4,5-tetrachloro-3-nitro- 118-74-1, Benzene, hexachloro- 123-33-1, 3,6-Pyridazinedione, 1,2-dihydro- 124-40-3, Dimethylamine 128-04-1, Carbamic acid, dimethyldithio-, sodium salt 131-52-2, Phenol, pentachloro-, sodium deriv. 132-27-4, Phenol, o-phenyl-, sodium deriv. 1319-77-3, Cresol 1336-21-6, Ammonium hydroxide 1403-61-8, Fradicin 2275-75-4, N 1045 2312-76-7, o-Cresol, 4,6-dinitro-, sodium deriv. 2492-26-4, Benzothiazole, 2-mercapto-, sodium deriv. 7778-54-3, Calcium hypochlorite 17273-33-5, 2-Naphthaleneacetic acid, sodium salt
(in mushroom-mildew control)

L96 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1955:75150 HCAPLUS
DOCUMENT NUMBER: 49:75150
ORIGINAL REFERENCE NO.: 49:14253i,14254c-g
TITLE: Chemotherapeutic application of some compounds to rice **plants** and the outbreak of Helminthosporium **leaf** spot
AUTHOR(S): Akai, Shigeyasu
CORPORATE SOURCE: Kyoto Univ.
SOURCE: Shokubutsu Byogai Kenkyu (1955), 5, 45-56
CODEN: SBYKAH; ISSN: 0370-8845
DOCUMENT TYPE: Journal
LANGUAGE: English

AB When rice seed was soaked in 2 p.p.m. CuSO4 soln. for 24 hrs. at room temp., no remarkable effect was shown in the controlling of **diseased** spots on mature **leaves**, but when rice seedlings were treated with the soln. of 2 p.p.m. CuSO4 and 200 p.p.m. boric acid, an appreciable effect was shown. When rice seed and roots of young seedlings were treated with 1-naphthaleneacetic acid and 3-indoleacetic acid solns. (10-100 p.p.m.), a difference in their effects was noticed for the root treatment but not for the seed one. When rice seed was soaked in solns. of 2,4-D, 10-3, 10-4, 10-5, 10-6%, and a control soln., for 48 hrs. at 36.degree., the percentages of **diseased** spots were, resp., 31, 41, 66, 62, and 100%. In this expt., the growth of the seedlings was delayed markedly when soaked in a 10-3% soln., but afterwards they recovered and almost no difference in the growth was obtained between plots tested. When rice seedlings were treated twice with 3 naphthoic acid derivs., 1,4-dihydronaphthoic (I), 1,2,3,4-tetrahydronaphthoic (II), and "2,4,5-trihydronaphthoic acid" (III), in the concns. of 2 p.p.m. at first and 5 p.p.m. after 4 days, the percentages of **diseased** spots were, resp., 21, 11, and 61%. I inhibited 50% germination of conidia in 10-2% concn., II did not inhibit in any concn., and III had a considerable fungicidal effect, permitting only 7% germination of conidia in 2 .times. 10-2% concn. I and II had no phytotoxic effect on rice **plants**, but III gave some injury. The chemotherapeutic action of vitamin K3 (2-methyl-1,4-naphthoquinone) was studied by soaking seed and roots of seedlings in 0.01-0.02% solns. At first the **plants** showed a vigorous growth, but the difference in **plant** growth between the treated **plants** and control diminished with the lapse of time. A significant protection from the **disease** was obtained in the treated **plants** by soaking in vitamin K3 soln., and the enlargement of **diseased** spots on **leaves** of treated **plant** was more delayed than that of the control. Pentachlorophenol, its Na salt, and pentachlorophenoxyacetic acid reduced markedly the infection by this fungus. However they caused injury in 0.0025% soln. to rice **plants**, changing the color of the **leaves** to yellow.

IT **94-75-7**, Acetic acid, (2,4-dichlorophenoxy)-
(in Helminthosporium control on rice)
RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 15A (Pesticides and Crop-Control Agents)
IT Helminthosporium
(control on rice, and **plant** regulators in relation thereto)
IT Fungicides or Fungistats
(for Helminthosporium on rice)
IT **Plant** regulators
(in Helminthosporium control on rice)
IT Rice
(Helminthosporium control on, and **plant** regulators in relation thereto)
IT 3-Indoleacetic acid
Boric acid
(in Helminthosporium control on rice)
IT 13295-81-3, Propionic acid, 3-chloro-, 5-nitrofurfuryl ester
(in Coccidioides immitis control)
IT 58-27-5, Menadione 86-87-3, 1-Naphthaleneacetic acid **94-75-7**, Acetic acid, (2,4-dichlorophenoxy)- 131-52-2, Phenol, pentachloro-, sodium deriv. 2877-14-7, Acetic acid, (pentachlorophenoxy)- 3299-82-9, 2-Naphthoic acid, 1,4-dihydro- 7758-98-7, **Copper** sulfate 53440-12-3, 2-Naphthoic acid, 1,2,3,4-tetrahydro-
(in Helminthosporium control on rice)

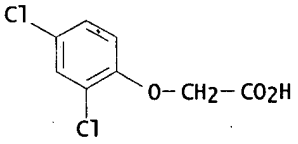
L96 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1950:57997 HCAPLUS
DOCUMENT NUMBER: 44:57997
ORIGINAL REFERENCE NO.: 44:10992a-e
TITLE: Gladiolus research in Florida, 1949-1950 season
AUTHOR(S): Magie, Robert O.
CORPORATE SOURCE: Florida Agr. Expt. Sta., Bradenton
SOURCE: North American Gladiolus Council Bulletin (1950), No. 23, 81-2,84,87
CODEN: NOGCA7; ISSN: 0029-2370
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 44, 5511b. The weather during the past season was discussed in relation to the development of Curvularia and Stemphylium **diseases**, and Botrytis sclerotia. Several new virus **diseases** and harvesting and storage problems are being investigated. In Florida, a great deal of trouble is encountered owing to overfertilization. The importance of including B, **Fe**, and Mn salts in fertilizer is pointed out; deficiencies may not show up until the following year. The "running out" of older corm stocks may be due to this deficiency. For pre-emergence control of weeds, the insol. 2,4-D was used in a wettable form, at 3 oz. per 1000 ft. of row in an 18-in. band centering on the row. (This form was used to prevent **root** injury due to excessive rainfall.) While results were satisfactory, the material was difficult to maintain in suspension. The most effective treatment was a spray mixt. of 2,4-D and Aero-Cyanate applied when the weeds were about 1/2 in. high and when the gladiolus **leaves** from No. 3 corms had 2-3 **leaves**. Rate of application was 5 lb. of Aero-Cyanate and 2 1/2 lb. of 2,4-D in 60 gal. per acre of rows spaced 3 ft. apart, half the area being sprayed. Aero-Cyanate alone was effective over a shorter period, when applied at 5-10 lb. per acre. Spraying must be carried out when the weeds are small, and repeated as necessary. Phenyl Hg acetate was effective and apparently quite safe for weed control at 3 lb. per acre, but was too expensive. Shell Oil 130 (pentachlorophenol) was discontinued

because of the danger to the operator's eyes. Methyl bromide is recommended for fumigating seed beds and beds for cormel planting to control nematodes, weeds, and soil fungi.

IT 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control, in gladiolus)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 15A (Economic Poisons)

IT Nutrition, plant
(boron, Fe and Mn in, of gladiolus)

IT Fusarium
(control of, on gladiolus)

IT Curvularia
Sclerotinia sclerotiorum
(control on gladiolus)

IT Gladiolus
(diseases of)

IT Fertilizers
(gladiolus diseases and)

IT Weed control
(in gladiolus)

IT Fumigation
(of gladiolus with MeBr)

IT Stemphylium
(on gladiolus and its control)

IT Gladiolus
(Fusarium control on corms)

IT 74-83-9, Methane, bromo-
(as gladiolus fumigant)

IT 7439-89-6, Iron 7439-96-5, Manganese 7440-42-8, Boron
(in gladiolus nutrition)

IT 62-38-4, Mercury, phenyl-, acetate
(in weed control in gladiolus)

IT 87-86-5, Phenol, pentachloro- 94-75-7, Acetic acid, (2,4-dichlorophenoxy)- 590-28-3, Potassium cyanate
(in weed control, in gladiolus)

L96 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1949:52190 HCAPLUS
DOCUMENT NUMBER: 43:52190
ORIGINAL REFERENCE NO.: 43:9338e-g
TITLE: Controlling carnation diseases
AUTHOR(S): Matheron, E. John
SOURCE: N. Y. State Flower Growers Bull. (1949), No. 49, 11-12
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

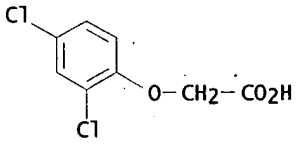
AB As a rooting agent, 1 g. of indolebutyric acid is mixed with 2 lb. of a very refined face powder; this powder does not permit too much to adhere to the bottom of the cutting. Cuttings are rooted in sand, which has been generously dusted with Fermate; the sand is changed for each batch of cuttings. Most of the rooted cuttings are benched where they will be undisturbed until final planting or benching time; too frequent transplanting tends to spread disease. All young plants that are placed indoors are dipped in a suspension of 2 lb. Fermate/100 gal. of water. Spiders are controlled with 15% wettable Parathion powder which is sometimes combined with the Fermate. Tech. Parathion has also been used at the rate of 5 oz./100 gal. of water; in each case 6 oz. of a

spreader-sticker is added per 100 gal. of water. Phygon at 2 teaspoons/gal. of water has given promising results. Limited trials with Fulex soil treatments gave neg. results.

IT 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 15A (Economic Poisons)

IT Grasses
(control of Bermuda and Johnson)

IT Spiders
(control of, on carnations)

IT Carnation (Dianthus)
(cutting, propagation and **disease** control)

IT Soils
(disinfection, for carnations with Fulex)

IT Insecticides
(for spiders on carnations)

IT **Plant** regulators
(indolebutyric acid as, for carnation cuttings)

IT 3-Indolebutyric acid
(as carnation-rooting agent)

IT Carbamic acid, dimethyldithio-, **iron** salt
(in carnation-**disease** control)

IT 56-38-2, Parathion
(in carnation spider control)

IT 117-80-6, Dichlone 3689-24-5, Fulex
(in carnation-**disease** control)

IT 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control)

L96 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1949:52066 HCAPLUS

DOCUMENT NUMBER: 43:52066

ORIGINAL REFERENCE NO.: 43:9313a-d

TITLE: Science in the land [Annual Rept.]

AUTHOR(S): Martin, W. H.

SOURCE: N. Jersey Agr. Expt. Sta., Ann. Rept. (1947), Volume Date 1945-1946 7-109

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

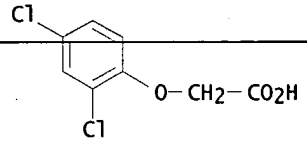
AB cf. C.A. 41, 1774e. Progress reports are made, of which the following are of chem. interest: the effects of feeding thyroprotein to dairy cattle, effects on Ca and P metabolism when traces of Mn, **Cu**, and **Fe** are added to the ratio of milking cows, use of thiouracil in swine fattening, phosphoric acid deficiencies in feeding, fertilization of bromegrass; effects of 2,4-D on hedge and field bindweed, mustard, watercress, horsenettle, curled dock, and dandelions; control of late blight of potatoes, relationship between boron and Ca in the nutrition of the tomato **plant**, fungicides for tomatoes, methylcellulose and Tersan (tetramethylthiuram disulfide) for the control of onion smut, control of European corn borer on sweet corn, effect of weather on the sugar and acid content of peaches, p-dichlorobenzene for the control of peach tree borer, fungicides for apple **diseases**, injurious effects of industrial fumes upon green **plants** in New Jersey, fertilization of strawberries, azobenzene for the control of red spiders on greenhouse **plants**, relationship between light intensity and

absorption of nutrients by **plants**, control of stink worm with benzene hexachloride, control of poison ivy with borax and ammonium sulfamate, fertilization requirements of tomatoes and corn, Mg deficiencies of blueberries, corn, potatoes, sweet potatoes, and tomatoes, relationship between ir **n** and Mn needs of **plants**, effect of factory fumes upon the soil, feeding of Vitamin D to oysters, rotenone content of devil's shoestring (Tephrosia virginiana) grown in New Jersey, fire-resistant barns made with cement and asbestos, protection of silo walls against the action of juices, and nutritive value of the protein of green snap beans.

IT **94-75-7**, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 15 (Soils and Fertilizers)

IT Agriculture (includes Agronomy)
(New Jersey Agr. Expt. Station report on)

IT Fungicides or Fungistats
(New Jersey Expt. Sta. reports on)

IT Feeding experiments
(New Jersey Expt. Station reports on)

IT Peaches
(acids and sugars in, weather effect on)

IT Red spider mite
(azobenzene in control of)

IT Fire-resistant materials
(barns)

IT Nutrition, animal
(bean (green-snap) protein in)

IT Potatoes
(blight (late) control on)

IT Grasses
(brome, fertilizer expts. with)

IT Absorption, biological
(by **plants**, light intensity and)

IT Poison ivy
Pyrausta nubilalis and(or) European corn borer
(control of)

IT Dock
(control of curled, 2,4-D in)

IT Bindweed
Dandelion and(or) Taraxacum officinale
Mustard
Solanum carolinense
Water cress
(control of, 2,4-D in)

IT Sanninoidea exitiosa and(or) Peachtree borer
(control of, p-dichlorobenzene in)

IT Earthworms
(control with hexachlorocyclohexane)

IT Thyroproteins
(effect on dairy cattle)

IT Fumes
Fumes
(effect on green **plants** and soil)

IT Insecticides
(expt. sta. reports on)

IT Fertilizers
(expts., in New Jersey)
IT Soils
(factory-fume effect on)
IT Corn
Strawberries
Tomatoes
(fertilizer expts. with)
IT Buildings
(fire-resistant barn-type)
IT **Plants**
(fume (industrial-) effect on)
IT Apples
(fungicides for)
IT Nutrition, **plant**
(in New Jersey)
IT Acids
(in peaches, effect of weather on)
IT Sugars
(in peaches, weather effect on)
IT Light
(intensity of, absorption of nutrients by **plants** and)
IT Blueberries
Corn
Potatoes
Sweet potatoes
Tomatoes
(magnesium deficiency in)
IT Tomatoes
(nutrition and pest control on)
IT Proteins
(of beans, nutritive value of)
IT Metabolism, animal
(of calcium and P, by milking cows, effect of **Cu**, **Fe** and Mn on)
IT Nutrition, **plant**
(of tomatoes, relation between B and Ca in)
IT Silos
(protection of walls of)
IT Beans and(or) Phaseolus
(proteins of green snap, nutritive value of)
IT Tephrosia virginiana
(rotenone in)
IT Onions
(smut control on)
IT Milk
(thyroprotein in feeding and)
IT Oysters
(vitamin D effect on)
IT Weed control
(with 2,4-D)
IT Cellulose, methyl ether
(in onion-smut control)
IT Vitamin, D (antirachitic)
(oyster feeding with)
IT 7664-38-2, Phosphoric acid
(deficiencies in feeding)
IT 7439-95-4, Magnesium
(deficiency of, in **plants** in New Jersey)
IT 7439-89-6, **Iron** 7439-96-5, Manganese 7440-50-8, **Copper**
(effect on metabolism of Ca and P during lactation in cattle)
IT 83-79-4, Rotenone
(in devil's shoestring)
IT 137-26-8, Disulfide, bis(dimethylthiocarbamoyl)
(in onion-smut control)
IT 106-46-7, Benzene, p-dichloro-

(in peach-tree borer control)
IT 7439-96-5, Manganese
(in **plant** nutrition, **Fe** and)
IT 7439-89-6, **Iron**
(in **plant** nutrition, Mn and)
IT 1303-96-4, Borax 7773-06-0, Ammonium sulfamate
(in poison-ivy control)
IT 103-33-3, Azobenzene
(in red-spider control on greenhouse **plants**)
IT 608-73-1, Cyclohexane, 1,2,3,4,5,6-hexachloro-
(in stink-worm control)
IT 141-90-2, Uracil, 2-thio-
(in swine fattening)
IT 7440-70-2, Calcium
(in tomato nutrition, B and)
IT 7440-42-8, Boron
(in tomato nutrition, Ca and)
IT **94-75-7**, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control)
IT 7440-70-2, Calcium 7723-14-0, Phosphorus
(metabolism of, by cows, effect of **Cu**, **Fe** and Mn on)

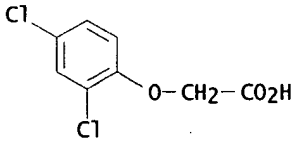
L96 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1947:8535 HCAPLUS
DOCUMENT NUMBER: 41:8535
ORIGINAL REFERENCE NO.: 41:1791f-i,1792c-d
TITLE: Research in agriculture (Annual report, 1944-45)
AUTHOR(S): Taggart, W. G.
CORPORATE SOURCE: Baton Rouge
SOURCE: Louisiana Agr. Expt. Sta., Ann. Rept. (1945), Volume Date 1944-1945 143 pp.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Research studies on the following subjects are briefly summarized: ascorbic acid value of tomatoes canned by 5 home-processing methods; varietal differences in the ascorbic acid value of strawberries; carotene and ascorbic acid content of sweet potatoes; vitamin A content of milk and butter; enrichment of rice; growth stimulants for microbiol. biotin assay; nutritional status of pregnant women; utilization of ascorbic acid of leafy vegetables by humans; exptl. lathyrism; detoxication of tung meal; toxic principles of the tung nut; freezing strawberries, shrimp, French fried potatoes, and freezing peaches with added ascorbic acid; dehydration of sweet potatoes; effect of org. matter, plowing, and vegetable cover on runoff; soybean meal and peanut meal as protein supplements for fattening pigs; effects of depth of application on the loss of N from flooded soil; sugar-cane fertilization; fertilization and rotation for cotton; oat fertilization; mineral deficiencies of La. dairy herds; producing pasture with com. fertilizer and manure; DDT-nicotine combination effective against cabbage worms; chem. control of sand wireworm; controlling velvet-bean caterpillar on soybeans with DDT or cryolite; nicotine in dry concentrate form for cotton aphid; sugar-cane borer control; Na fluosilicate more toxic than cryolite to the borer; nicotine and nicotine-rotenone dust mixts. for control of turnip aphid; onion thrip control; control of cockroaches, fleas, brown dog tick, and flies; seasonal changes in carotene content of sweet potatoes; waxing stored sweet potatoes; control of nematodes by soil treatment; fermate controls mildew and anthracnose **diseases** of cucumbers; 2,4-D on various weeds; soil rot of sweet potatoes controlled by applying S; soil treatment for control of shallot white rot; physiology of the avian thyroid; coccidiosis control; Johne's **disease** in cattle; gastro-intestinal nematode parasites of cattle; Crotalaria spectabilis poisoning in Louisiana livestock; drugs for the control of pinkeye in cattle; effect of lime on production of strawberries; green feeds for hens; P fertilization with various carriers; effect of straw with and without fertilizers for rice; residual effect of Ca arsenate on rice yields; substitutes, adjuvants, and reduced dosages for rotenone and

pyrethrum for control of insects attacking cole **cr ps**; and chem. and microbiol. studies of soil from wilt-free and wilt-infested areas.

IT **94-75-7**, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control)

RN 94-75-7 HCAPLUS

CN Acetic acid, (2,4-dichlorophenoxy)- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 15A (Economic Poisons)

IT Lathyrism

IT Sweet potatoes
(Expt. Sta. reports on, of Louisiana)

IT Frozen foods
(French-fried potatoes, peaches, shrimp and strawberries)

IT Carotene
Nutrition, animal
Strawberries
(Louisiana Expt. Sta. report on)

IT Insecticides
Soils
(Louisiana Expt. Sta. reports on)

IT Pyrethrum
(as cole-**crop** insecticide)

IT Soybean meal
(as protein supplement, for fattening hogs)

IT Poisoning and Intoxication
(by Crotalaria spectabilis, of livestock)

IT Cabbage
(caterpillar control on, DDT-nicotine combinations in)

IT Conjunctivitis
(control in cattle)

IT Aphis gossypii
Coccidiosis
Cockroaches
Diatraea saccharalis and(or) Sugarcane borer
Fleas
Flies
Horistonotus uhlerii and(or) Sand wireworm
Rhipicephalus sanguineus and(or) Brown dog tick
Rhopalosiphum pseudobrassicae and(or) Turnip aphid
Thrips tabaci and(or) Onion thrips
(control of)

IT Cucumber
(control of anthracnose and mildew on)

IT Anticarsia gemmatilis and (or) Velvetbean caterpillar
(control of on soybeans)

IT Nematodes
(control of, in cattle and soils)

IT Tung meal
(detoxication of)

IT Straw
(effect on rice)

IT Rice
Rice
(enrichment of, and effect of Ca arsenate residues, fertilizers and straw on)

IT Fertilizers
(expts., in Louisiana)

IT Cotton

(fertilization and rotation for)
IT Oats
Pasture
Sugar cane
(fertilizer expts. with)
IT Growth substances
(for biotin microbiol. assay)
IT Peaches
Shrimp
(freezing of)
IT Potatoes
(french-fried, freezing of)
IT Feeding stuffs
(green, for poultry)
IT Dysentery
(in cattle)
IT Peanut meal
(in fattening hogs)
IT Poisons
(in tung nut)
IT Conjunctivitis
(infectious, pharmaceuticals for)
IT Brassica
(insect control on)
IT Crotalaria spectabilis
(livestock poisoning by)
IT Pregnancy
(nutrition in)
IT Waxing
(of potatoes (sweet))
IT Drying
(of sweet potatoes)
IT Detoxication
(of tung meal)
IT Thyroid gland
(physiology of avian)
IT Vitamins
(rice enrichment with)
IT Lime
(strawberry production and)
IT Aleurites
(toxic principles of)
IT Soybeans
(velvet-bean-caterpillar control on)
IT Butter
Milk
(vitamin A in)
IT Tomatoes
(vitamin C in canned)
IT Canned goods
(vitamin C in tomato)
IT Vegetables
(vitamin C utilization from leafy, by humans)
IT Shallots
(white rot of, control of)
IT Weed control
(with 2,4-D)
IT Feeding experiments
(with peanut meal and soybean meal on hogs)
IT Vitamin, A
(in butter and milk)
IT Carbamic acid, dimethyldithio-, iron salt
(in control of anthracnose and mildew on cucumbers)
IT 50-81-7, Vitamin, C
(Louisiana Expt. Sta. report on)
IT 15096-52-3, Cryolite
(as insecticide, in La.)

IT 54-11-5, Nicotine
(as insecticide, in Louisiana)
IT 58-85-5, Biotin
(detn. of, growth stimulants for microbiol.)
IT 7778-44-1, Calcium arsenate
(effect on rice)
IT 16893-85-9, Sodium fluosilicate
(in sugar-cane-borer control)
IT 7704-34-9, Sulfur
(in sweet-potato-soil-rot control)
IT 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-
(in weed control)
IT 83-79-4, Rotenone
(insecticide from)
IT 50-29-3, Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)-
(reviews on)